TRANSMITTAL

هيئة كهرباء ومياه وغاز الشارقة
Sharjah Electricity, Water and Gas Authority

PROJECT / CONTRACT TITLE : POTABLE WATER SUPPLY TO JABAL AL DEEM - KALBA PACKAGE-2 MAIN PUMPING STATION AND BOOSTER PUMPING STATION (JP108)

CONTRACTOR'S CONTRACT # JP-108

CONTRACTOR : M/S. AL JAZEERAH DRILLING LLC | CONSULTANT : M/S. JACOBS | EMPLOYER : M/S.SEWGA KALBA

TRANSMITTAL No. JP108-TRN-007R1 | **DATE: 30-Jul-2026**

To: Attention: Marwan Ahmed
Adrdess
Email ID: Marwan.Ahmed@jacobs.com
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Submitted for
- [ ] As requested
- [ ] For Information / Record
- [x] For Review / Comments
- [x] For Approval
- [ ] For necessary action

Shipment Method: Email | Confidentiality [Yes/No]: Yes

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SR.	Document No.	Description	Rev.	Copies	Remarks	Approval Code (For consultant use)
1	JP-108 – HSEP	HSE Plan for Jabal Al Deem - Kalba Package-2	1	PDF		

For Contractor

Name:	Designation:	Signature:	Date:
Ahmed Al Juaidi	Project Manager		30-Jul-2026

For Consultant Use | Contarct # | Jacobs' Project Number

[√] Approved [ ] Approved subject to comments [ ] Revise and Re-submit before proceeding [ ] Rejected

*Comments:

The Contractor HSE Plan (Revision 1) has been reviewed. All previous review comments have been satisfactorily addressed and incorporated.

Rajeev Jnanadevan

Review and approval are only for general conformance with the concept of the project and general compliance with the information provided in the contract documents. Contractor, and his Subcontractor / Supplier, remains responsible for compliance with contract documents, confirmation and correlation of quantities and dimensions, selection of fabrication process and techniques, coordination of trades, and performance of this work in a safe and satisfactory manner.

Use Submittal Review Sheet to track the closure of critical comments. Use legible handwriting.

Name: Marwan Ahmed	Designation: RE	Signature:	Date:

Resident Engineer
JACOBS
Sign:

Aug/03/2026

Al Jazeerah Drilling

هيئة كهرباء ومياه وغاز الشارقة
Sharjah Electricity, Water and Gas Authority

Jacobs

PROJECT: Potable Water Supply to Jabal Al Deem - Kalba Package-2 Main Pumping Station and Booster Pumping Station

Review Comments/Response Sheet

Document No.	JP108-TRN-007	**Rev.**	1	**Date of Submission**	30-Jul-26
Title:	HSE Plan for Jabal Al Deem - Kalba Package-2				
Jacobs Comments Sheet No.	AE643WTS-JAC-TRN-007-CRS	**Rev.**	1	**Date:**	31-Jul-26

No.	Comments	Initials	Date
Jacobs 0.1	HSE plan is a live document which should be periodically reviewed and updated as per the site conditions.	RAJ	18-Nov-25
AJD 0.1	Noted & shall be complied	AJ	21-Nov-25
Jacobs 0.2	The HSE plan must be communicated to the site team, and a record of communication must be maintained.	RAJ	18-Nov-25
AJD 0.2	Noted & shall be complied	AJ	21-Nov-25
Jacobs 0.3	Any deviation from the HSE plan, should be notified to Jacobs and the plan must be updated accordingly.	RAJ	18-Nov-25
AJD 0.3	Noted & shall be complied	AJ	21-Nov-25
Jacobs 0.4	All incidents on the project must be reported to Jacobs on time.	RAJ	18-Nov-25
AJD 0.4	Noted & shall be complied	AJ	21-Nov-25
Jacobs 0.5	The project management team must support in the implementation of the HSE plan requirements, by allocating adequate budget and resources.	RAJ	18-Nov-25
AJD 0.5	Noted & shall be complied	AJ	21-Nov-25

NOTE: The review of this document was broad and general; any omissions, errors or discrepancies in the comments by Jacobs / SEWA shall not relieve the Contractor of their whole responsibility of works / design responsibility with respect to the contract requirements/ specifications and applicable codes & standards

Legend

- ☐ Comments issued for Rev. 0
- ☐ Closed Comments
- ☐ Open Comments
- ☐ Addl.Comments in Successive Revisions

The Jacobs Reviewer:

Reviewed by: Checked by:

- ☑ **[A] No Objection**
- ☐ **[B] No Objection Subject to Comments**
- ☐ **[C] Returned with Comments**
- ☐ **[D] Review not Required**
- ☐ **[E] Information**

Position: Resident Engineer **Name:** Marwan Ahmed **Signature**

Jazeerah Response:

By **Ahmed Al Juaidi** **Checked By**

HEALTH, SAFETY & ENVIRONMENT PLAN

CLIENT: SHARJAH ELECTRICITY, WATER AND GAS AUTHORITY
ENGINEER: JACOBS
CONTRACTOR: AL JAZEERAH DRILLING

Rev	Date	Purpose	Description	Prepared by	Reviewed & Approved by
00	21.10.2025	HSE	Issued for Review	NASIR ALI KHAN (HSE Manager)	AHMED JUAIDI (Project Manager)

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RECORD OF REVISION		
SECTION	**REVISION DETAILS**	**DATE**

1. INTRODUCTION

The HSE Plan is designed to safeguard the health and safety of all personnel on site, prevent property damage, and minimize operational disruptions. It outlines specific safety procedures and defines individual responsibilities.

The Project Manager is responsible for overall safety and compliance with the HSE Plan, while the Project Engineer leads safety supervision. Everyone on site, including the client's staff, must actively participate in maintaining safety. All supervisory staff must read and sign the HSE Plan. Subcontractors are required to comply with this plan and any other Al Jazeerah Drilling policies and procedures.

AL JAZEERAH DRILLING is committed to implementing health and safety measures throughout the contract and will strive to meet or exceed relevant standards.

AL JAZEERAH DRILLING will provide Health and Safety measures during all phases of the contract and will endeavour to conform and/or exceed to the following references:

- **All applicable legal regulations & requirements**
- **Client HSE Standards Document**
- **Contract Document: General Specification**
- **Contract Document: Particular Specification**
- **Government of Sharjah-Prevention & Safety Authority (SPSA)**

2. Project Details

Name of the Project	**POTABLE WATER SUPPLY TO JABAL AL DEEM – KALBA PACKAGE – 2 (PUMPING STATIONS)**
Client	**SHARJAH ELECTRICITY, WATER AND GAS AUTHORITY**
Engineer	**JACOBS**
Contractor	**AL JAZEERAH DRILLING**

2.1 Key Person:

CLIENT			
NAME	**DESIGNATION**	**CONTACT DETAIL**	
		Contact No	**E-Mail ID**
Eng. SAIF KHALAF Al ZAABI	HEAD OF WATER DISTRIBUTION	050-5306332	saif.fps@sewa.gov.ae
ENGINEER			
Mr. SIVAPRASAD SASIDHARAN	PROJET MANAGER	050-3007556	sivaprasad.sasidharanbaby@jacobs.com
Mr. MARWAN AHMED	RESIDENT ENGINEER	050-4976750	marwan.ahmed@jacobs.com
Mr. RAJEEV A JNANADEVAN	HSE MANAGER	054-3453939	RajeevAJ.Jnanadevan@jacobs.com
CONTRACTOR			
Mr. AHMED JUAIDI	PROJECT MANAGER	056-4222833	ahmedaljuaidi@aljazeerahdrilling.com
Mr. MOHAMMAD JASEER	PROJECT ENGINEER	055-4471022	Ya_hilles@hotmail.com
Mr. MOHAMMAD ABID	HSE OFFICER	050-4207634	jpwadialhelo@gmail.com

2.2 Contact Details:

2.2.1 Name of the Client and Contact Information:

SHARJAH ELECTRICITY, WATER AND GAS AUTHORITY

P.O. Box - 135

Tel No: +971-5288000 Fax: +971- 65288888

هيئة كهرباء ومياه وغاز الشارقة
Sharjah Electricity, Water and Gas Authority

2.2.2 Name of the Engineer & Contact Information:

JACOBS

P.O. Box- 673

Tel No: +971-65734333 Fax: +971- 65732999

2.2.3 Name of approved principal JD and contact details:

AL JAZERRAH DRILLING

P.O. Box 2845

Tel No: +971- 65672558/ +971-65688020

3. Project Description

The Package -2 scope of work includes the construction, testing and commissioning of:

- Partially below ground RCC reservoir with a capacity of 910 m_3 at proposed Main Pump station in the vicinity of the tapping point with Wadi Al Helo pipeline.

- Main pump station with capacity of 25 lps in the vicinity of tap-off point from Wadi Al Helo pipeline including all Electro-Mechanical and Instrumentation, Control and Automation (ICA) works.

- Partially below ground potable water RCC break pressure tank at Booster Pump station in the halfway of the pipeline to Jabal Al Deem with a capacity of 300 m_3.

- Booster Pump Station with capacity of 25 lps in the halfway of the pipeline to Jabal Al Deem including all Electro-Mechanical and Instrumentation, Control and Automation (ICA) works.

- Tie-in with pipeline works included under Package -1 (Pipeline and Chambers)

The scope of Works includes but is not limited to the items listed in the table below:

i. Potable water Pumping Stations & Storage Tanks

Civil Structural works:

All necessary civil works to be carried out as stated below:

・ Partially below ground RCC tank including all incoming, outgoing pipes and overflow and drain pipes complete in respects.

・ Pumping stations buildings at main Pump Station and Booster Pump Station locations with Pump Room, MCC Room, Transformer Room and Operator Room.

・ Sodium Hypochlorite dosing system.

・ Guard House with toilet facilities.

・ Valve chambers and thrust blocks within the pump station plot.

・ Covers, handrails, platform, stairs, pipe supports, plinths for all equipment

including surge vessel and compressor system.

・ Civil/structural works required for EOT crane

・ Site works for the main pump station and booster pump station including

boundary wall and gate.

・ Pump Station internal roads and paving works.

Mechanical works:

・ Dry mounted Vertical Multistage potable water Pumps at main pump station and booster pump station.

・ Carbon Steel pipework including pipes, fittings, valves, basket strainer inside the pumping station, pipework up to the tank inlet. Tie in of pump discharge main to potable water conveyance line outside pumping station.

・ Sodium Hypochlorite dosing system.

・ Fire protection system (Firefighting and fire alarm) for Site wide, pump room, MCC room, Transformer Room, Operator Room and Guard House. Surge Analysis and surge protection system including surge vessels and compressor system.

・ HVAC System for Pump Room, MCC room, Transformer Room, Operator Room and Guard House.

・ Electric overhead crane.

・ Drainage and plumbing works.

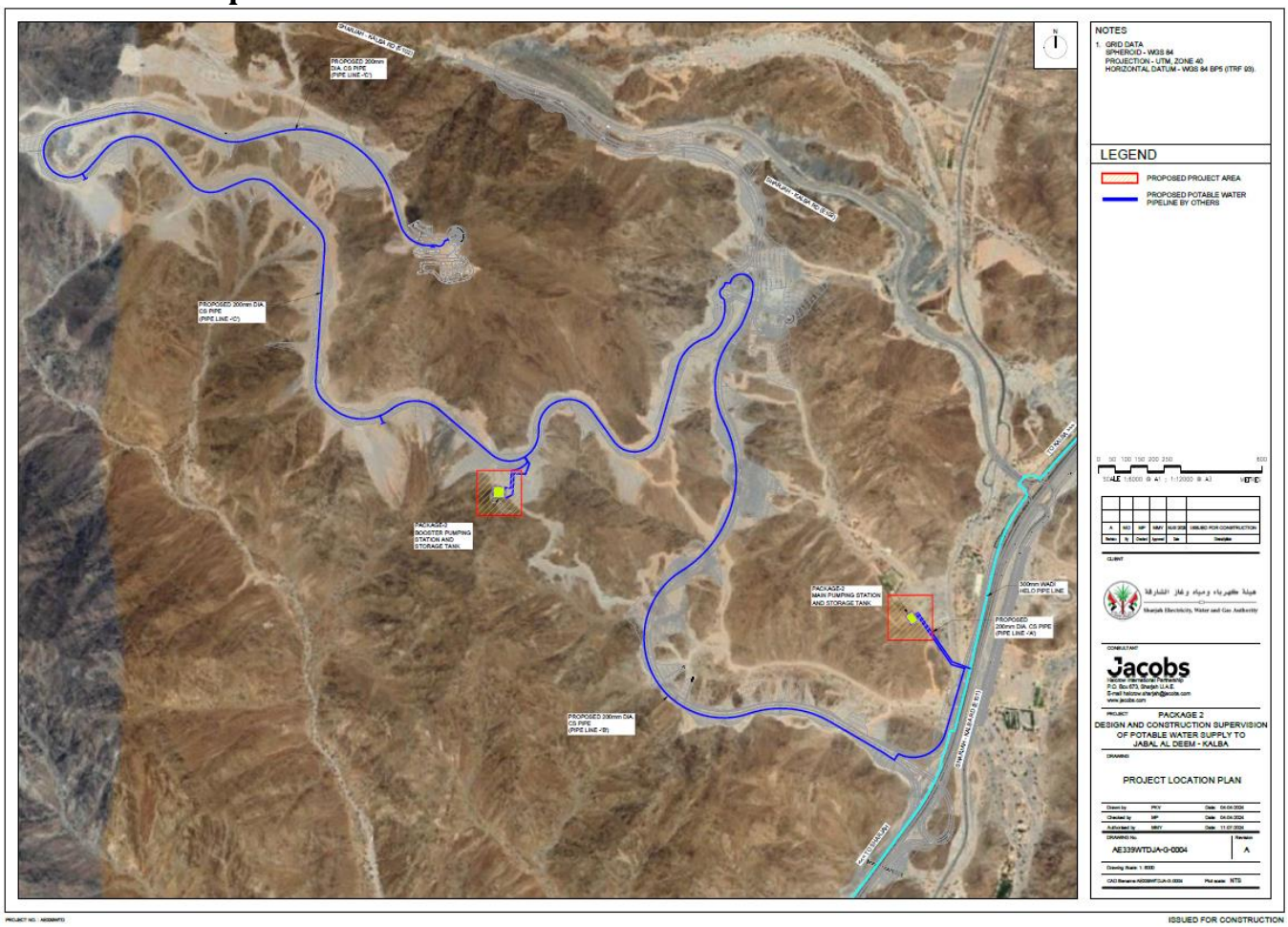
Electrical and ICA works:

Electrical and ICA works include:

・ MCC, Transformer room

- Workstation for the operator
- Small power and lighting
- Area lighting for the pump station plot
- Provision for connection for the mobile diesel generator
- Lightning protection system
- Earthing system, Connection to nearest power source
- Fire alarm system for the pumping station
- PLC/HMI based SCADA system, all necessary instrumentation system for automatic operation.

3.1 Location Map



3.2 Project Schedules and Milestones

3.3.1 Project schedules:

Project Commencement	21.10.2025

Project Completion	21.12.2026
Anticipated Manpower	75

3.3.2 Working Hours:
The regular working hours for the employees shall be:
From Saturdays to Thursdays:
Morning section : 06:00 Hours to 12:00 Hours
Lunch break : 12:00 Hours to 13:00 Hours
Afternoon Section : 13:00 Hours to 18:00 Hours
Saturday and Holidays Rest Day
For Summer Period:
MOHR guidelines will be followed for site works timing. The worker shall have a rest break between 12: 30 PM to 03: 00 PM Accordingly. The date and timing will change which will depend entirely on the following:

1. Memorandum issued by **JD** management.
2. Any further Notification from Ministry of Labour.
3. Request from **JD** site due to some considerations e.g. rise of temperature / humidity.
4. Complaints from the work force.

Month of Ramadan:
During the Ramadan period working hours shall be from **06:00** hours to **12:00** hours. Eating food in the public areas is strictly prohibited.

4. Policy and Management

4.1 HSE Policy

Al Jazeerah Drilling

HEALTH, SAFETY & ENVIRONMENT POLICY

At **Al Jazeerah Drilling LLC**, we prioritize achieving consistently high standards in health, safety, and environmental protection. Safeguarding the occupational health and safety of all individuals impacted by our work activities is fundamental to our business. We are equally committed to respecting the natural, social, and economic environments of the communities where we operate.

When designing, planning, constructing, or maintaining built infrastructure, we are committed to preventing work related injuries and ill-health and conducting our operation in an environmentally and socially responsible manner.

We will minimize health safety and environment risks and impacts by actively involving our employees, partners, and sub-contractors in developing and sustaining a positive company-wide health safety and environment culture. This will be achieved by the use of best practice health, safety, and environment management techniques, by strong leadership and demonstrable commitment by line management and employees, by setting and achievement of realistic health, safety, and environment objectives and targets that promote positive health and safety culture, the efficient use of energy and resources, the minimization and reduction of wastes and emission and prevention of pollution and by compliance with health safety and environments legislation as a minimum standard.

We are committed to the continual improvement of our health safety and environment performance and will ensure that across all our operations there is an appropriate management system in place, this system will describe the organization and designated responsibilities for health safety and environment the arrangement for planning and implementing the work necessary to prevent work- retaliated injuries, ill-health and environmental impacts(through the identification of hazards and impacts and assessments and management of associated risks to as low as reasonably practicable) and will set out the means for measuring and reviewing performance and auditing the management system.

The implementation of our health safety and environment management system is a line management responsibility supported by function specialists. It relies upon the competence, co-operative and commitment of all staff we will therefore:

- Allocate sufficient human, financial, and time resources to ensure the effectiveness and sustainability of the HSE management system.
- Develop the necessary competencies in our workforce through training, instruction, and supervision to enable safe and environmentally responsible practices.
- Establish clear communication, cooperation, and control measures supported by documented procedures and guidance.
- Actively seek employee feedback and participation in HSE matters through effective consultation mechanisms.
- Ensure compliance with relevant HSE legislation and maintain up-to-date knowledge of our obligations.

We will also confirm the presence of these arrangements to our supply chain partners.

The Managing Director has overall responsibility for this policy, including providing the necessary resources for its effective implementation and periodic review. The policy will be reviewed regularly to ensure its relevance and effectiveness.

This policy is made available to all employees and individuals working on behalf of the company. It will be prominently displayed at the head office and all project sites. Employees seeking additional information can contact the HSE Department at the head office or project site.

AWNI SAWAN
Managing Director

Doc: JD/HSEM/Rev.5 **Date: 18 Nov 2024**

Objective

All Project Participants must comply with the HSE Plan, Statutory Safety Regulations and all reasonable practices towards the accomplishment of the project inspirational goal, which is:

"Zero Incident – Zero Injury"

This will be achieved by:

- Carrying out Hazard Identification, risk assessment and risk reduction measures on routine and no-routine activities until risks are reduced into as low as reasonably practicable.
- Training to heighten safety awareness
- Consultation and communication with the work-force and sub-JDs to identify effective preventive actions
- Permit-to-work system
- Safety inspections
- Review of safety violations and application of effective preventive actions

The main objectives of this plan are:

- Advisory services – policy supporting work
- Monitoring and reporting on the HSE performance indicators
- Induction and training
- Objective observations (site visits, incident inquiries, working methods analysis,) including reporting
- HSE audits
- Provide assistance during site operation
- Management of some HSE related processes (First aid, Emergency response, …)

Overall Goal / Objectives

With our HSE Policy, our overall Goal is to manage HSE and Security risks/vulnerabilities to a level that is as low as we can reasonably achieve and maintain, and so deliver projects safely and effectively.

Towards achievement of this overall goal we have derived the following primary Objectives;

- Fully comply with all legal and other (contractual, standards, specifications, processes/procedures etc.) requirements.
- Minimize the exposure of our assets (people and property) and the environment to operational hazards/threats
- Eliminate Lost Time Injuries resulting from project activities
- Maintain cost and schedule requirements
- Eliminate customer complaints

As part of our extensive HSE Performance Measures, and developed from our overall goal and primary objectives, a set of HSE Targets (KPI's) for projects have been set.

HSE Targets

The following HSE Targets, derived from overall goal and objectives, are set for all projects:

Sl No	Objectives & Targets	Objective Category	Resources	Responsible Person	Time for Achievement	Evaluation and Monitoring (Quarterly)	Documents	Evaluation	KPI Result
1	**Enhance the HSE Leadership** 1) JD management representative to conduct a Weekly Leadership Tour focusing on identifying and improving HSE culture on the project. **Target- 1 HSE Leadership Tour per week** 2) AJD Management participation in Monthly HSE Meetings **Target- 100% attendance**	Leadership Engagement	1)AJD weekly Inspection checklist 2) HSE Plan Section 3) HSE Monthly MoM	AJD-PM/PE Sub-Contractor - PM/CM	Evaluated end of each month	Quarterly evaluation to check compliance	1)Records of minutes of meeting of quarterly evaluation check 2) HSE LT Reports		
2	**Reduce the Occupational illness in the project** 1) Health Surveillance checks by the full-time site nurse 2) Health awareness trainings/campaigns **Target: Zero Occupational illness**	Health	1) Health Risk Assessment 2) Heat Stress Management Plan	AJD-PM/PE Sub-Contractor-PM	Evaluated end of each month	Quarterly evaluation to check compliance	1)Health surveillance records 2) Training/ Campaign records		
3	**Pro-active Safety Monitoring** 1) Weekly and Monthly HSE Inspections by HSE Team **Target 100 % compliance** 2) Implementation and compliance of Permit to Work System **Target 100 % compliance**	Safety	1)AJD daily inspection checklist 2) HSE Plan Section 3) AJD PTW system	AJD-HSEO	Evaluated end of each month	Quarterly evaluation to check compliance	1)AJD Inspection checklist records 2) AJD PTW		
4	**Increase Workers Participation and Consultation** 1. Safety Committee Meeting with workers representatives **Target: 1 every month** 2. Quarterly OSH awards and incentives **Target: Quarterly 10 awards**	Worker engagement	1)AJD HSE Plan	AJD-PM/PE/HSE Sub-Contractor-PM	1) Every Quarter 2) Monthly	Quarterly evaluation to check compliance	1) Records of Safety Committee meeting minutes 2) Award Distribution Records		
5	**Enhance HSE Trainings** **Target:** 1) 1 hours /Employee/month (Excluding HSE Induction) 2) Fire Warden- 10% Total Manpower 3) First Aider- 1/50 employee	Training	1)AJD HSE Plan	AJD-PM/PE/HSE Sub-Contractor-PM	Evaluated end of each month	Quarterly evaluation to check compliance	1) Training Records 2) Monthly HSE Statistics Report		
6	**Emergency Response** **Target:** Emergency Drill- 1 /quarter	Training	1)AJD -HSE Plan	AJD-PM/PE/HSE Sub-Contractor-PM	Evaluated end of each month	Quarterly evaluation to check compliance	Drill Records		

4.2 Roles and Responsibility

Project Manager

The Project Manager is directly responsible for establishing and maintaining HSE Program in accordance with the HSE Plan. He shall be further responsible for:

- Ensuring that the Company's policy is understood and appreciated by each employee and that each employee fully understands the Safety responsibility allocated to him. Shall lead and execute Company's Workplace Safety, Health and Environmental Management System.
- Shall chair the Workplace HSE committee meetings and to ensure that safety follow-up action discussed are remedied on the site.
- Shall attend the Weekly HSE Inspection & Meeting at site.
- Shall ensure the safety and health provisions and requirements are adhered to by all employees and JDs.
- Shall ensure that all statutory requirements of the Regulations, Codes of Practice and company's safety rules & regulations are complied with at all times.
- Shall review safety procedures and requirements, other safety issues and recommendations for improvement on safety.
- Shall conduct regular inspections, participate Weekly management site walk around with client and audits on all safety provisions at the worksite.
- Shall develop and maintain close liaison and regular communication with relevant statutory authorities.
- Shall establish and maintain a positive attitude towards safety at the site.
- Shall be the Chairman for the Project Workplace Safety & Health Committee.
- Shall ensure all the Safe Work Procedures and Risk Assessment, Approved Method Statements, Risk Assessment are implemented effectively.
- Shall approve the Monthly Reports, Audits and Safety Statistics reviewed by the HSE Officer.
- Shall investigate all incidents/Near Misses and advice line management to take corrective and preventive measures/action to prevent reoccurrence
- Set an example for others.

Project Engineer:

- Directly responsible for following the HSE regulations. He shall work in close collaboration with the HSE Officer to implement the Occupational HSE Plan and any addendum or modification as may be issued. He will also supervise the execution of remedial and emergency actions.
- The Project Engineer shall be responsible for providing his workers with a safe and healthy working environment. He will also promote HSE awareness and safe attitude/ behaviour among them at every opportunity.
- He should ensure Method Statement including RA are available at Work Location.
- The Project Engineer shall be firstly involved in the prevention of incidents and directly responsible for the Safety & the Environmental aspect of their work activities. He should understand MS, RA, for the activity to be carried out.

- The Project Engineer has direct responsibility to provide and maintain a safe and healthy working environment for the workforce under their control and promote awareness at all opportunities. This duty is consequently shared with their subordinates as Section Leaders, Foremen and Gang Leaders, each within their defined areas and to whom queries on HSE should be referred to in the first instance.
- Correct infractions, control "Emergencies and attend HSE meetings.
- Understand the Method Statement including RA for activity to carried out for and explain this to the workgroup.

HSE Officer

The Site HSE Officer is responsible for the coordination and direction of the Site HSE Program reporting directly to the corporate HSE Manager. He shall be responsible for advising the site construction team on:

- Methods for the prevention of injury to personnel and damage to plant and equipment.
- Further improvements in existing working methods.
- Implementation of JD's and Client's HSE Procedures and Regulations.
- Suitability from a safety viewpoint of new and hired plant and equipment and the validity of all appropriate test certificates.
- Suitability of standards of protective clothing and equipment.
- Potential hazards on new work activities before work commences.
- The site/work area safety organization and fire precautions required.
- Carrying out and analysis of information on injuries, damage, and production loss, assess incident surveys and inspections on a regular basis to ensure that safe working practices are in operation.
- Reviewing any corrective actions recommended eliminating or minimizing incident causes.
- Supervising the recording trends and reviewing overall safety performances.
- Assisting in the training of employees to promote awareness of incident prevention and damage control.
- Ensuring strict adherence to Client's Work Permit Procedures and HSE Plan.
- Coordinating incident/ incident response including first aid, rescue, evacuation, investigation and reporting.
- Carry-out daily site HSE Inspection and provide the report to the HSE Manager.

Site Engineer

Site Engineer shall be responsible for the implementation of the HSE Program and shall:

- Ensure that all supervisors and foremen under their control are familiar and comply with HSE procedures and regulations.
- Ensure that needed and applicable HSE training is conducted for all workers.
- Ensure subcontractors compliance with all appropriate HSE regulations.
- Ensure familiarity and compliance with Work Permit Procedures.
- Liaise with the HSE Officer on hazard identification and establishing preventative measures.
- Ensure that correct procedures and systems of work are being developed and maintained.

- Appraise the effectiveness of all Engineers, Supervisors, Foremen etc. under their control.
- Ensure that only licensed/certified workers/operators are utilized on relevant operations as required.

Supervisor / Foreman

Supervisors and Foremen shall be responsible for:

- Organizing the site and work places so as to ensure that work is carried out to the required standard, with minimum risk to men, equipment and materials and for ensuring that the employees under his responsibility do not engage in unsafe work practices or take unnecessary risks.
- Knowing the broad requirements of relevant HSE regulations and Client's specific requirements.
- Giving all employees precise instructions on their responsibilities for correct working methods prior to tasks being undertaken.
- Arranging delivery and stacking of materials to avoid increasing the risks of double handling; positioning plant effectively; ensuring that electrical supplies are safely maintained.
- Planning and maintaining a tidy site/work area, arranging for the removal of debris daily.
- Checking that all machinery, equipment and plant are maintained in good condition and reporting any defects immediately.
- Ensuring that adequate protective clothing and equipment is issued to each person and that the equipment is properly used.
- Ensuring that all persons under his control know what to do in the event of an incident, fire, or other emergency.
- Arranging to investigate all incidents promptly to discover their cause and eliminate recurrence. The supervisor, in conjunction with the HSE Officer shall complete an Incident Report.
- Continually developing safe practices in their section to ensure maximum safety for all under their supervision.
- Ensuring strict adherence to Work Permit Procedures.
- Ensuring that each of their employees is fully informed of the job hazards they may expect to encounter.
- Ensuring that all injured employees receive immediate medical treatment.
- Conducting routine toolbox meetings before every start of work.

Site Workers

Each employee shall be responsible for:

- Ensuring that any action they take, or fail to take, does not put themselves, other persons, or plant and equipment, at risk.
- Ensuring that they wear the personal protective equipment supplied.
- Ensuring that all tools and equipment are free from defects and suitable for the purpose, before using them.
- Reporting all defects in plant, equipment, tools, materials, etc. to their immediate supervisor.
- Reporting all incidents to their immediate supervisor, without delay.
- Complying with the company and safety rules and other rules as detailed locally in their work areas.

- Comply with all HSE Procedures. If the procedure is not applicable to their particular operation, they shall report this to their immediate supervisor for their action.
- Comply with any instruction given to promote HSE within the workplace.
- Each individual worker or employee is responsible for observing all HSE Rules applicable to his work and work area.
- Additional HSE instructions may be provided later for the performance of hazardous or unfamiliar tasks for which a Method Statement will be submitted and approved. The portion of this method Statement dealing with HSE will become an integral part of the Occupational HSE Plan.
- Individuals should report to the Management any hazards, injuries, incidents, and/ or any other unsafe working condition.

Subcontractor's Responsibility

- All subcontractors will adopt the JD HSE Plan.
- Subcontractors shall appoint a full-time HSE Officer to ensure that his personnel are following the safety program.
- Subcontractors personnel brought on site shall have undergone site induction, practical training and their services will be supported by relevant certificates.
- Subcontractors shall be responsible for the safety of their people.
- Subcontractors shall provide adequate safe tools, equipment for the job and necessary personal protective equipment for his personnel.
- Subcontractors shall inform about any incident to the company and shall submit incident statistics periodically.

First Aid

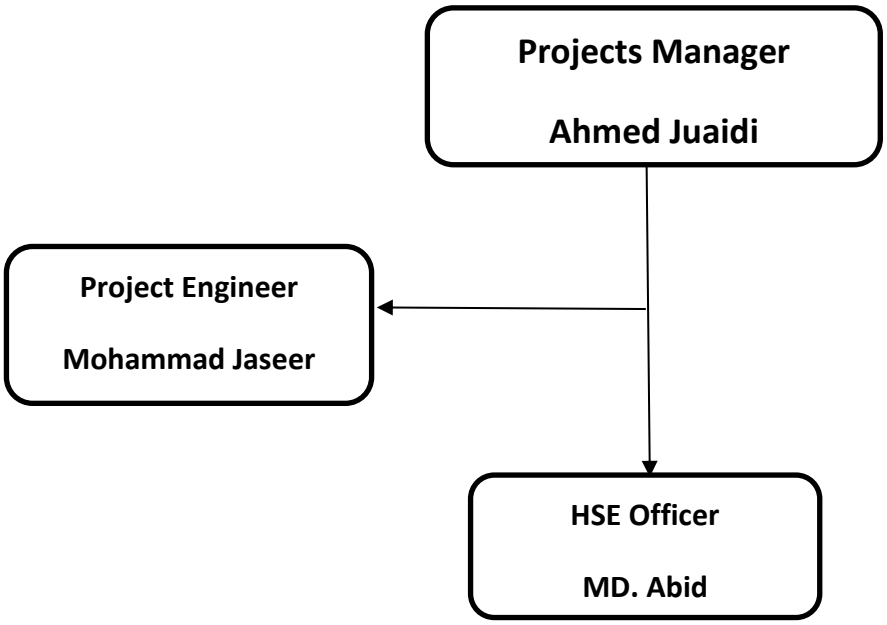
A First Aid Room will be provided on Site if necessary (as per standard requirements) and will be sufficient for initial treatment in the event of an incident. Arrangements will be made with a local clinic/hospital for the treatment of any major serious incidents or injuries. The provision of first aid facilities shall meet the requirements specified in the Federal Law No 8 1980.

The Project Management, the HSE Officer and the First Aider will be responsible for deploying the required first aid and rescue equipment, including training and awareness programs related to the use of such equipment.

Visitors

All visitors of the Project shall attend to HSE induction before visiting/starting their work. Visitors to sites will be issued a visitor's badge or, if eligible, a temporary or permanent badge soon after their arrival. Badges (sticker) for access to work sites will only be issued after successful completion of the Project HSE Induction Course. Visitors will be escorted by someone familiar with site. They shall not perform any construction activity and will not leave their escorts during their time in the site.

4.2.3 HSE Organization chart.



4.3 HSE Legal Requirement

The federal laws of UAE and the regulations of Sharjah Emirate are applicable to this project.

All subcontractors shall comply with these laws and this plan. They will not operate separate plans, unless it is a specialist job for which they will have a HSE plan approved by JD HSE. They shall provide their own safety personnel who meet the competency requirements set out below.

Reference has been made as often as possible to the UAE rules:

- Federal Law No 8 of 1980 (covers labour relations).
- Ministerial Order No. (32) For the Year of 1982 Regarding the Determination of the ways and means to Protect Employees against Occupational Hazards
- Ministerial Order 32 - Article (26) Part c requires approval and certification of HSE Officer Qualifications to be sought from the Ministry of Labour and Social Affairs.
- Ministerial Order No. (32) Year 1982 - Article (24) Accident /Injury & Dangerous occurring reporting procedure and Investigation.
- Ministerial Order No. (32) Year 1982 - Article (3) Safety Training
- UAE Fire and Life Safety Code, 2018
- Sharjah Municipality HSE requirements and applicable NOCs and permits from authorities.
- Sharjah Prevention & Safety Authority (SPSA) (Applicable CoP, Guidelines)
- SEWGA HSE Requirements, any other applicable Client Requirement

4.4 Sub-Contractor Management

To manage the safety and health risk arising from engaging sub- subcontractors, the entity shall implement the relevant steps of the following JD management process:

1. Establishment of Project HSE requirements
2. Evaluation/Selection
3. Contractual Agreement
4. Co-ordination and Communication
5. Mobilization/ Work in progress
6. Monitoring Performance
7. Commissioning
8. Demobilisation/ Decommissioning
9. Contract close-out

4.4.1 Selection and Appointment of Subcontractor/Supplier

Pre-qualification documents shall generally satisfy the following requirements:

- Certified or meeting the essential requirements of the appropriate ISO standard
- HSE performance
- Known reliability
- Conformance with the relevant requirements local law
- HSE Training Requirement (where applicable)
- QHSE related Documentation (Pre-Assessment)
- Plant Equipment third-party Certifications.
- Competency Certifications.

Pre-qualification documentation shall be forwarded for review through the normal submittal channels.
The first evaluation of sub-JDs shall be done on site, after six months of the work commencement at site and re-evaluation will be scheduled as per the result of first evaluation and subject to the Company's policy.

4.4.2 Subcontractor Agreement

A standard form of agreement, which has been used successfully and improved, will be implemented with its appendices.
The subcontract agreement is produced in two originals each being signed and stamped/sealed by both parties. Copies of all subcontract agreements are held on site and by the related departments. All Nominated Sub subcontractors shall be subject to a standard agreement approved by the Engineer.

4.4.3 Subcontractor Audit

As part of the monitoring of the effectiveness of the HSE System, periodic HSE Internal Audits will be carried out by the IMS Manager and other internal auditors from JD.
Internal Quality HSE Audits for JD and Sub subcontractors shall be carried out and in accordance with the JD System Procedure for Internal Auditing. The Quality Department shall plan and conduct Site Audits. The frequency of audits is subject to the site requirements, but generally twice in a year.

In addition to planned audits, the Project Quality / HSE Manager shall perform spot checks on various key activities on an on-going basis in order to ensure that the quality & HSE management system is adhered.

4.5 HSE Risk Management

4.5.1 Hazard identification, risk assessment and risk reduction planning

This project will be subject to the normal hazards encountered during general construction activity plus an additional set of hazards due to the nature of the Project.
The HSE plan shall manage hazards using the four-phase process of:

1. HSE Design & Engineering whereby the risks are assessed and methods formulated to reduce the risks to tolerable levels.
2. HSE Administration and implementation where the arrangements, methods and procedures, such as the permit to work and hot work permit procedures, plus resources such as safe plant, equipment, and materials are provided and personnel trained to use them. The arrangements, methods and procedures, including inspection, audit and emergency procedures are then implemented.
3. HSE Performance Measurement and Monitoring: where the results of inspections, audit, and incident reports are analysed and HSE improvement opportunities identified as corrective or preventive actions.
4. HSE Review by site management where priority decisions are taken and resources provided to implement changes that will improve HSE performance.

New activities will be subject to risk assessment in phase 1 and the cycle will be repeated until the conclusion of the project.
HSE Risk assessments and Environmental Impact Assessment shall be detail in method statements to identify hazards that would otherwise be hidden and to implement adequate preventive measures.
Before commencing the job, the risk assessment results shall be clearly explained to the work force

4.5.2 Risk Assessment (RA)

Risk Assessment (RA), for all the activities shall be carried out according to specific method statement and shall be submitted to Engineer along with specific method statements for approval.

4.5.2.1 Subcontractor Risk assessment and method statement review and Approval process.

JD shall review the submitted subcontractors Risk Assessment and Method Statement for all project activities as per the standard Risk assessment and Method statement procedure

4.6 Training and Awareness

4.6.1 HSE Awareness

HSE awareness and safe practices shall be promoted during HSE induction training and additional awareness sessions including “tool-box” meetings prior to starting work. HSE awareness will be maintained by notices being placed in strategic locations around the site to remind all employees, visitors and trespassers the on-going activity and its associated risk and through regular HSE meetings, audits and inspections. All employees will be informed of the various HSE procedures that must be followed.
Safety notices should be in both English and Arabic, additionally any language can be used which is commonly understood by the workgroup and distributed around the site in strategic locations shall include but not be limited to:

- "No smoking"

- "Hard Hat Area"
- "Danger – Construction site – Do not Enter"
- "Authorised Personnel Only"
- "Lifting Operation in Progress"
- "Caution – Inflammable Material"
- Wear Suitable PPE (Hard Hat, Safety Shoes, Coverall, Visibility Vest, etc.

Personal Protective Signboards mentioning all mandatory PPE and Additional required for the Job/Work location to be posted.
Other standard HSE at work type visual posters aimed at minimising language difficulties/ communication.
The JD shall impose sanctions on any employee (including those of subcontractors) who fails to follow the prescribed HSE program requirements.

4.6.2 Induction Training

HSE Dept. will deliver the HSE Induction. This will be defined within the site's HSE plan and will include the person's responsibilities for delivery and the contents of the HSE induction course.

- **Level of Induction**

The following levels of induction will be established to ensure that HSE is communicated effectively.

- **Site HSE Induction**

This is the induction course that is mandatory for all persons working on a project site or a division (i.e. workshops, warehouses etc), including subcontractors. The course structure will be made specific as per the work place requirements.

- **Office HSE Induction**

The induction course that is mandatory for all persons working in an office set-up, including subcontractors, if any. The course structure will be made office specific as per the requirements of the workplace environment.

- **Visitors HSE Brief**

All visitors will be required to report to the main security office and sign in and will be given specific visitors HSE brief. The management will ensure that all visitors are escorted when visiting JD site locations / work premises.

- **Temporary / Emergency Induction**

In the event of a person requiring an induction to enable him to work on site in the case of, emergency, personnel replacement, or maintenance callout etc., a temporary induction may be given which is valid for 48 hours only. The individual will be escorted or under the direct supervision of a person who has completed the full site induction at all times when on site.

4.6.3. Tool Box Meetings

Regular toolbox meetings will be carried HSE Officers/Supervisors/Foremen for each crew (i.e. carpenters, welders, electricians, pipe fitters, mechanical fitters, etc). The meetings will be short, approximately 10 minutes at the start of each day. All unsafe conditions or unsafe work practices noted on the Project that may affect the workers will be brought to their attention. The proposed methods for eliminating these practices or conditions will be discussed (see attached toolbox meeting forms in appendices).
Employees will be encouraged to make HSE suggestions at these meetings. When hazardous materials or conditions are about to be encountered or when crews appear to be careless about HSE, additional toolbox meeting will be scheduled.

4.7 HSE Incidents

4.7.1. Incident Category

Accidents are divided into 3 categories and are defined as follows:

- Major Injury
- Lost Time (Reportable) Injury
- Minor Injury (First Aid Injury)

Major Injury

Injury arising out of, or in connection with work, which results in any of the following:

- Fracture of the skull, spine or pelvis
- Fracture of any bone in the arm or waist, leg or ankle, not a bone in the hand or foot.
- Amputations of a hand or foot, a finger, thumb or toe, or any part thereof if the joint or bone is completely severed.
- The loss of sight of an eye, a penetrating injury to an eye or a chemical or hot metal burns to an eye.
- Either injury (including burns) requiring immediate medical treatment or loss of consciousness resulting in either case from electrical shock from any electrical circuit or equipment, whether or not due to direct contact.
- Loss of consciousness from lack of oxygen.
- Either acute illness requiring medical treatment or loss of consciousness, resulting in either case from the absorption of any substance by inhalation, ingestion or through the skin.
- Death of any person.

Lost Time (Reportable) Injury

Injury arising out of, or in connection with work, which involves a person being absent from his / her place of work for more than one day.

Minor Injury

Injury arising out of, or in connection with work, which does not fit into any of the other two categories.

4.7.2. Near Miss Reporting

All the near misses must be reported by filling-up the standard JD Near Miss report format and to be submitted to the HSE Officer for review and Investigation. The closed Near Miss should be forwarded to the Project Manager for further submission to the Consultant & client authority. Near Miss reporting form will be placed all prominent site location and site office. An In-house training shall be conducted to the work force for, what is near Miss and How to reporting near misses.

4.7.3. Incident reporting

Over and above the legal requirements for reporting incidents to Local Authorities, the JD is required to report to the Client's Representative as per the reporting framework.

Incident reporting shall be done via an immediate phone call to the engineer's representative follow by an Email notification to the Engineer / Client. Further more detail investigation shall be conducted and report submitted to Engineer/ Client as per contract.

Incidents/near miss investigations will be performed by the site management including, Engineer, Foreman, and HSE Officer. The Incident Report shall be in accordance with Article (28) of Ministerial Decision No.

(32) of 1982. The HSE Officer, on request, will add additional data and recommendations for preventative actions. Reports shall be in accordance with EMPLOYER Incident Investigation and Procedures.
The occurrence of a fatal incident requires thorough investigation and a detailed report shall be prepared by the HSE Officer for review by the Project Manager and forwarded to the Engineer/ Client's Representative. The Project Manager is responsible for the thorough investigation of each such incident to determine the causes.
Incident reports will be analysed by HSE Officer to determine unsafe conditions and unsafe acts in order to improve preventive procedures as necessary.

4.7.4. Treating Injury

If serious injury is apparent or suspected, utilize the pre-established Emergency hospital ambulance service.
For small cuts, scratches, etc. The first aider will render First Aid treatment.

4.7.5. Incident/ Near Miss Investigation

All incidents/ near misses must be reported immediately to the HSE Officer for further investigation.
Initial reporting will be completed within 24 hours of the incidents, and will be submitted to the Project Manager. Client/ Consultant shall be informed through EMPLOYER giving details of the occurrence, assessing responsibility and action for prevention in the future.
A full investigation report will be prepared and submitted in Incident Investigation Review Form to be submitted in 7 days.

4.8 HSE Consultation and communication methods

4.8.1 General

The effectiveness of the HSE plan requires open communication within the work forces including subcontractors. The Health & Safety Employee's Representatives are consulted regularly. A prime purpose of the project HSE Plan will be to open communication channels for HSE dialogue between all parties concerned with HSE. The indoctrination [briefing] for all personnel will emphasize that two-way communication is essential for HSE success and will advise recipients how they may initiate such dialogue and their right to raise HSE issues for discussion with their supervisors.

4.8.2 HSE Work force Involvements and motivation

Since HSE success is of paramount importance among the project deliverables, it implies that HSE must remain in the forefront of each project participant's attention. Dissemination of HSE information through an established publicity program generates interest among project personnel and provides a format for continuing circulation of HSE information such as the following:

- Employee representative to be the member of the project HSE committee meeting therefore employees can communicate their views and complaints within the Project Committee meeting.
- An advice method regarding modifications to the existing HSE program in Addition to the established communication through HSE and supervisory Staff.
- Information regarding project execution activities from an HSE viewpoint.
- Recognition of HSE accomplishments on the Project.
- General HSE industry information that could serve to maintain and Increase the HSE awareness and attention of the project's work force.

4.8.3 Safety Motivation and Recognition

A Key motivation in HSE success is the development of continuing pride by all the work force, group or personnel, in the achieved target. The HSE Plan will include a program of recognition and awards to individuals and/or groups who have reached defined, significant HSE milestones or who have made outstanding contributions to the project HSE program. All individuals, groups, and firms in the project organisation will be eligible for participation in the program.

Awards will be presented and celebrated at award congregations and the details of the achievements will be published on project notice boards. Participation at award congregations will also include, when appropriate, not only management staff members but also the Client's Representative.

4.8.4 Incentive Policy

The purpose of this Health, Safety & Environment (HSE) incentive policy is to motivate all workers to promote the HSE aspect of their work and that of their colleagues, through a fair incentive scheme resulting in a reward for a TEAM under supervision of a foreman.

This Policy is applicable to:

- All Engineer, Supervisor, Labour both day and night shift.
- The award winners will be proposed by the HSE team and the Site Management approved by the Project manager. To be considered for the award the following criteria will be taken into account:

  - Following the approved method statement.
  - Following the approved risk assessment.
  - Leading HSE by example.
  - Cooperation with the HSE team.
  - Presenting at least one pre task brief per month.
  - Presenting at least one tool box talk per week.
  - Closing out all Safety Observation Report (SOR) issued in responsibilities.
  - Ensuring the correct PPE is worn for each task at all times on site his area

Guidelines

Frequency: The award is to be given on a Quarterly basis and is to be presented in front of as many employees as possible.

Presentation of Reward: The reward should be presented by the Client, Engineer Representative, Project Manager. The Safety Team must be involved with the award ceremony. The presentation should be used to inform workers of progress, safe hours worked and any accidents that may have occurred.

4.8.5 HSE Meeting

HSE meetings on a construction project are an essential tool in continued development of a mutual understanding of HSE objectives and program. They provide an environment in which individual commitment, effort, and ideas can be continuously correlated toward improvement in HSE programs and achievements.

Bi-weekly HSE Meeting carried out by JD will be attended by Project Manager (JD), HSE Personnel (JD), and Consultant Representative which will be schedule by EMPLOYER.

Internal Monthly HSE Meeting should be scheduled bi-weekly and attended by Project Manager, HSE Personnel, Project Engineer, subcontractors and Supplier Representative. Site HSE Meetings shall be held to review the safety performance for the previous period and discussing accomplishment, any areas for improved,

hazards and control of on-going activity and consultation with employee HSE representative, Incident Investigation. Review and development of HSE Policies and Objectives.
Attendance of HSE personnel and a representative from each subcontractor shall be mandatory.

4.8.6 Site HSE Notice Board

JD shall set up and maintain safety notice boards at appropriate prominent location. These notice boards shall be located in positions that are clearly visible to the JDs employees and anyone entering the work place (subcontractors & Visitors) Safety signs shall be selected that described the appropriate hazards and relevant emergency contact information shall be in Arabic, English and other most common languages of the workforce. All persons shall be made fully aware of the safety sign and the emergency contact information, prior to commencing work site.
HSE Officer shall be maintaining the Main HSE Site notice boards that shall contain as a minimum.

- Project Directory
- HSE Policy Statement
- Incident Reporting Procedure
- Action in the event of major Incident Notice & Emergency Response Team Contact No.
- Site emergency and Evacuation plan
- Visitors Notice
- Site Rules

4.9 Monitoring, Inspections and audits

4.9.1. Internal Inspection and Joint Inspection.

HSE officer will conduct daily Inspection and report shall be submitted to the Project manager. In addition to that weekly Joint HSE Inspection shall be carried with all subcontractors, Consultant with involved Site Project Manager/Project Engineer and HSE Teams. Hazards with high risk shall temporarily suspend the activities and close-out within 24- hours. Other Hazards with medium and low risk should be rectified before the next Weekly Joint Safety Inspection.

4.9.2. Internal Audit

Safety Audit (Internal) to be carried out by IMS Department yearly. IAR (Improvement Action Request) will be issued for any Non-Conformance. Result of Audit and close –out procedure will be submitted to Project Manager and copy will be given to Client/ Client Representative.

4.9.3. HSE Reporting

JD and subcontractors to submit monthly and weekly Safety Report to Client in approved formats as advised by Engineer detailing.

i) Average daily work force on site
ii) Cumulative man-hours to report date
iii) Number of lost-time injuries
iv) Number of incidents
v) Number of external and internal training conducted etc.
vi) Near miss reports
vii) Pre operation compliance reports
viii) Audit reports
ix) Non-Compliance reports

x) Corrective Action Report
xi) Any Special reports required by the government agencies.
xii) Plant Equipment inspection records
xiii) Emergency Drill Records

4.9.4 Safety Breach Note.
If any time condition/work practices are considered as extreme non-conformance, the works will be stopped immediately by the person identifying the breach and a safety breach notice issued to the offending companies by Project Engineer or the most senior member of the management team on site. A copy of the safety breach notice will also be sent to the company's head office. The works will not be permitted to re-commence until a satisfactory response has been received in writing within 24 hours detailing the corrective action to be implemented to ensure that work can continue safely, this must be agreed by the authorising HSE manager. The Client and the Engineer will be communicated for the same.

4.10 HSE Plan Review and Update

Health Safety & Environment Plan is a live document and should not be rigid and unchanged one it has been developed and agreed. HSE Plan should be subjected to regular review annually or as a whole and in its individual parts, as part of the arrangements of planning and organising.
Health Safety & Environment Plan need to be updated and reviewed as following aspect;

- Significant changes in the structure of the organization.
- Any deviation from the project scope of works. (Changing process or work method and changes of work premises)
- Following changes in the Key personnel.
- When a change in legislation occurs.
- Where the Audit, Risk assessment, monitoring exercises or investigations shows that the plan is no longer effective or relevant.
- Following the outcomes of an accident's investigation or ill health.
- Following enforcement action.

5. Project Specific Information

5.1 Site Security Plan and Access Control

5.1.1 General
Site office area shall be Fenced and / Or surrounded within a Boundary for the protection of the personnel and other people surrounded the area. Entry pass will be implemented and one standby personnel will be assigned to control the coming in off personnel and visitors.

5.1.2. Visitor Control.
Only personnel with a professional relation to the site shall be allowed on the site visit. Visitors must report to the Client/ Engineer's secretary and/ or the JD's secretary at all time. One of the personnel from the JD / consultant side will be accompanied with visitor while visiting the site. Visitors Induction training should be completed before site visit.

5.1.3 Night Works

Night work will be scheduled as per the site working condition. Following safety precautions will be applied during night works.

1. Adequate Illumination will provide in the work place
2. Periodic interval to avoid the fatigue.
3. Refreshment program
4. Close supervision
5. Night work emergency plan and adequate training to the work force.
6. Night PTW

5.1.4 Emergency lighting:

It is important for rescue operations to have significant lighting. All places with major key functions during evacuations and or emergencies shall be equipped with emergency lighting. Emergency lighting may be powered by an independent electrical source.

5.2. Project permit to Work procedure

5.2.1. General

The permit to work consists of a document which:

- Details the work to be done;
- Details the precautions to be taken;
- States that all foreseeable hazards have been noted;
- States the control measures to be implemented.

Permits to work do not, in themselves make a job free from risk, they rely upon effective control and coordination in order that hazards are identified and risks are suitably and sufficiently assessed.

Following Permits will be commonly used in this project;

Excavation Permit

Confined Space Entry Permit

Hot Work Permit

Lifting Permit

5.2.2. Requirements of a Permit to Work Procedure

The HSE Plan identify the following requirements of a Permit to Work System:

The permit to work should clearly state:

Type of Permit;

- Permit Number;
- Job Location;
- Plant Identification (where applicable);
- The work to be carried out, and any limitations;
- Hazard Identification;
- Necessary Precautions;
- Protective Equipment;
- Authorisation;
- Acceptance;
- Extension / Shift Handover Procedures;
- Hand back;

- Cancellation

5.2.3. Permit issue and Close out Procedure

Project Engineer/Site Engineer shall issue the permit after ensure all hazards associated with the proposed job have been identified, assessed and controlled. HSE officer approved the permit after the inspection of the safety arrangement. Supervisors/ Gang Leaders received the permit to execute the job. Permit will be placed on the permit box near to the work location for Client / Consultants review.
All this Permit only valid till approved period specified (Day/Shift) and cannot be extended. New Permit to work to be issued for any changes from the approved condition. Receiver will give back to the permit to Project Engineer / Site Engineer after finishing work or finishing the valid period. Project Engineer / Site Engineer close out the permit and copies will be filed with the HSE Officer for their records.
Client/ Consultant representative and JD HSE officer have a right to cancel the permit immediately if the work is not carrying out as per the specific permit work procedure.

5.2.4. Roles and responsibilities

To ensure the permit to work system is effective, all individuals involved must clearly understand and take an active role in meeting their responsibilities. Due to the potential hazards associated with permit to work, the specific responsibilities outlined below must be followed.

Project Engineer and Site Engineer:

- Project Engineer / Site Engineer is authorized to issue the permit.
- Project Engineer / Site Engineer must understand the work for which a permit has been sought and understand isolation and tagging procedures,
- Ensure that the person(s) doing the work are appropriately qualified to do the work
- Ensure that all checks are undertaken to ensure that the permit was used correctly
- Ensure appropriate persons are informed when a job is completed or suspended and that the permit is cancelled.
- Ensure all hazards associated with the proposed job have been identified, assessed and controlled.
- Be familiar with the intended task(s).
- Ensure that the area and equipment are made safe before hand over.
- Outline how the work is to be undertaken (e.g. procedures, precautions, equipment, location, start time, duration) - verbally and where necessary in writing.
- Maintain records of work permits.

Permit Receiver (Supervisors and Gang Leaders)

- Satisfy them that they understand the requirements of the permit.
- Be skilled, qualified trained and competent to perform the work, including the use of any personal protective equipment.
- All aspects on the permit must be completed and documented.
- Adhere to the Permit to Work requirements.
- Ensure the job is performed in a safe manner.
- Be aware of the hazards that could exist and have the necessary controls in place.
- Make equipment and area safe on completion of the task.

- Make the work area safe and seek immediate advice if a doubt or if circumstances or conditions change.
- Ensure that all tags and signs are prominently displayed so that personnel are aware that the equipment & etc. is isolated / not to be operated

HSE Officer

- Ensure that the person(s) doing the work are appropriately qualified to do the work
- Ensure the job is performed in a safe manner. If Not HSE Officer is authorized to cancel the permit immediately.
- Arrange training to the work force regarding Permit to Work procedure
- Maintain records of work permits. Distributed the closed permit copy to client / consultant.

5.3. Traffic Management Plan

5.3.1. Introduction

Managing traffic is essential to providing a safe construction workplace. Traffic can include cars, utilities, delivery trucks, forklifts, excavators and pedestrians such as workers and visitors.

Vehicles including powered mobile plant moving in and around workplaces, reversing, loading and unloading are activities frequently linked with workplace injuries and fatalities.

The safest way to protect pedestrians is to eliminate the hazard, which means removing the use of all vehicles including powered mobile plant or removing all pedestrians from traffic areas. This could be achieved by designing the layout of the workplace to eliminate the interaction of pedestrians and vehicles.

Where this is not reasonably practicable, the risks must be minimized so far as is reasonably practicable. This can be achieved by careful planning and by controlling vehicle operations and pedestrian movements at the workplace. This includes loading/unloading activities.

The key issues to consider for managing traffic at a construction workplace include:

- Keeping pedestrians and vehicles apart, including on site and when vehicles enter and exit the workplace
- Minimising vehicle movements
- The risks of vehicles reversing
- Traffic signs

5.3.2. Information, Instruction and Training

Traffic Management and Logistic consist that information, instruction and training must be provided to workers and others at the workplace.

All workers need to know and understand the traffic rules, site safety policies and procedures for the workplace. Instructions should be provided to visitors before their visit, if possible.

External drivers should be aware of the site’s traffic safety procedures, any restrictions on vehicle size or type and where they are to make the delivery prior to attending the workplace.

Other persons at the workplace, so far as they're able, must comply with any reasonable instruction that is given by the JD Traffic Management Plan. They must also take reasonable care for their own health and safety and that they do not adversely affect the health and safety of others.

JD shall be conducted in house training to all concerned employees regarding company specific traffic management plan in addition to the weekly Tool Box Talk meeting.

5.3.3. Segregation of pedestrians and vehicles

The following actions will help keep pedestrians and vehicles apart both on site and when vehicles enter or exit the workplace:

- Provide separate traffic routes for pedestrians and vehicles
- Secure the areas where vehicles and powered mobile plant are being used, for example pedestrian barriers or traffic control barricades
- Provide separate clearly marked pedestrian walkways that take a direct route where possible
- Where walkways cross roadways, provide a clearly signed and lit crossing point where drivers and pedestrians can see each other clearly
- When exiting the site, make sure drivers driving out onto public roads can see both ways along the footway before they move on to it
- Do not block walkways so that pedestrians have to step onto the vehicle route
- Create 'no go' zones for powered mobile plant (e.g. pedestrian-only areas around tearooms, accommodation and entrances)
- Designate specific parking areas for workers' and visitors' vehicles outside the construction zone'.

Consider scheduling work that eliminates vehicles, powered mobile plant and pedestrians being in the same area at the same time.

Also consider creating 'no go' zones for pedestrians and implementing safe work distances.

5.3.4. Minimising vehicle movements

Good planning can help to minimise vehicle movement around a workplace.

To limit the number of vehicles at a workplace:

- Provide vehicle parking for workers and visitors away from the work area
- Control entry to the work area
- Plan storage areas so that delivery vehicles do not have to cross the site.

Where multiple items of powered mobile plant are being operated around the workplace, a person (Banks Man) with the necessary training or qualifications should direct the plant:

- When operating in close proximity to each other
- When reversing
- Where persons are on the ground
- In other situations, as indicated by a risk assessment.

5.3.5. Vehicles reversing

The need for vehicles to reverse should be avoided where possible as reversing is a major cause of fatal accidents.

One-way systems shall be provided in storage areas. A turning circle could be installed so that vehicles can turn without reversing.

Where it is necessary for vehicles to reverse:

- Trained flagman, use reversing sensors, reversing cameras and mirrors and warning devices such as reversing alarms
- Ensure drivers have another person to direct them before reversing if they cannot see clearly behind. The driver should maintain visual contact with the person directing them and signallers should wear high visibility clothing
- Ensure workers and other people are familiar with reversing areas and reversing areas are clearly marked
- Ensure operational plant movements are alerted to workers including swing radius, articulation points and overhead load movement.

5.3.6. Signs

Prominently display clear warning signs in relevant, well-lit areas to remind persons of the traffic management hazards and requirements. Excavations should be clearly signed.

Traffic routes should be clearly sign posted to indicate restricted parking, visitor parking, headroom, speed limits, vehicle movement, key site areas and other route hazards. Standard road signs should be used where possible and speed limits should be implemented and enforced.

5.3.7. Parking and Maintenance.

Construction / Heavy vehicle and Office staff/ visitor's vehicle parking area should be separated and reverse parking is mandatory on the parking designated area. Name board shall be placed all parking location for identifying their parking place. If found any vehicle parked on the No Parking area, disciplinary action will be taken against the driver.

Plant manager / Plant In charge is responsible to the maintenance and services the vehicles. Vehicle maintenance and service garage shall be proved nearby the site location. Vehicle washing allowed only the designated area.

5.3.8. Vehicular Accident

If you are involved in any accident with a vehicle.

- Take care of the medical needs of anyone involved.
- Do not admit fault at the scene. Advise other party that the accident will be reported to the local police.
- Contact the police and do not leave the scene of the accident (unless you have to seek medical attention) and unless being released by the police with the necessary paperwork.
- Report the accident to your supervisor
- Fill out Incident Notification Form within 24 hours of the accident if required

5.4 Material Storage plan

5.4.1 Storage

- Storage shall be carried out safely and in designated places on the site.
- A storage plan shall be prepared with materials and products sorted and grouped as per the material type and / or quality of the product.
- Storage areas shall be organised and maintained by the Storekeepers. They shall ensure that materials are stored in conditions that will avoid deterioration and enable efficient issue for authorized use.
- Storage of materials in the works structures shall be minimised.
- Storage of hazardous materials in the works structures is strictly forbidden and must be store in chemical store only.
- Weekly inspection of the store will be carried by the HSE Officer. Checklist attached in the Appendix

5.5 Hazardous Materials / Substances

5.5.1 Hazardous Materials / Substances

The following requirements shall be implemented as and when required:
The applicable UAE Legislation is the Ministerial Order No (32) Year 1982 – Article 6 and 18.
The control of substances hazardous to health is a critical element of the HSE program, and shall be achieved through a combination of communication, establishment of safe work systems and controlled handling and disposal of such hazardous substances.
Hazardous materials are substances that may cause adverse health effects to people through ingestion, inhalation, injection, or absorption in to the human body, in short or long term, or cause environmental damage if discharged to air, ground or water.

- The use of hazardous materials shall be reduced to the practical minimum limit.
- Flammable and other hazardous materials shall be stored in a systematic controlled way. Their use and storage location shall be authorised by the HSE Dept.
- The quantities of flammable and hazardous materials in storage shall be registered and communicated by the storekeeper to the Project Engineer and the HSE Dept.
- The storage of hazardous products shall be in accordance with relevant Code of Practice/MSDS and will include, when required, the provision of the required fire extinguishers, ventilation, spill mitigation and clean up facilities and the like.
- Handling, use and manipulation of hazardous goods shall be done according the MSDS and with the outmost care and precaution.
- All hazardous material storage areas will be clearly identified on site. Proper delimitation and signage will be displayed.
- Disposal of hazardous waste shall be done according to respective MSDS (Materials Safety Data Sheets) and register accordingly.
- COSHH assessment form to be filled for all the chemicals to be use in the project and communicated.

All spillages shall be cleaned up immediately to prevent contamination of the soil, the air and or water aquifers. Spill kit should be available for chemical and Oil Spillages, also to provide training for spill response team.

All subcontractors shall implement safe work systems and provide all relevant personal protective equipment to ensure that the risks associated with the use, handling and-disposal of such substances are manageable.
The Sub-JD shall ensure that any person handling such hazardous substances has received instructions, regarding the hazard, the work system to be adopted and the actions required in the event of spillage.
Work that for any reason becomes, or threatens to become hazardous, unsafe, unhealthy or hazardous to the environment shall be stopped immediately until necessary corrections have been taken.
A specific risk assessment in accordance with the COSHH regulations or regulations that controls hazardous substances shall be carried out for all work involving the use of hazardous substances.
In all cases, the assessment shall consider options for minimising any risk to people or the environment by implementing suitable and sufficient controls.
The hierarchy of controls to be used in all cases is;

1. Eliminate the need for hazardous materials as much as possible;
2. Substitute the hazardous material by a less hazardous material.
3. Reduce the exposure by changing the work process, or exposure time or nature of the material.
4. Physically isolate the hazardous material from people and the environment.
5. Control exposure through engineering means such as the use of exhaust ventilation etc.
6. Hazardous materials shall be stored in places that can be locked, to avoid unforeseen contact.
7. Use of PPE to eliminate the residual personal risks

All hazardous materials purchased for the project shall be supplied with the MSDS (Materials Safety Data Sheets). The HSE Officer shall hold all MSDS together with the central register of all hazardous substances on the work site. Copy of MSDS shall be held by first aider and at a location on site where hazardous materials are being stored and used. Separate chemical room to be established for storing all the chemicals, weekly checklist for the same will be used for the inspection by the HSE Officer.

5.6 Site Safety rules

Site safety rules shall be displayed at the entrance to the site and at locations across the project as per the required standard size.
Safety signs and notice gives a particular message to those who may be exposed to hazards associated with the work environment. This can prevent incident and significant health hazards. It also indicates the location of safety and fire protection equipment's, or for giving guidance and instruction in an emergency situation.
Signboards- A specific Object, activity or situation providing information (Warning) about a hazards or danger to health and safety at work, a prohibition, a mandatory, action, an escape route or the location of the fire fighting and first aid equipment's.
Specific safety sign shall be provided wherever there is risk that cannot be controlled by any other means, e.g. by engineering controls and safe systems of works

5.7 Emergency management Plan.

5.7.1 Purpose

- The Purpose of this procedure is to protect employee, visitors and the environment in the event of life-threatening situations and to promptly return to normal activities once the threat/emergency has passed.
- Emergencies can occur from a number of causes, and therefore it is necessary to implement procedures to respond in different situations.
- The plan will be reviewed on site and will be made available to all new and existing employees through their Supervising Managers.

- The plan will be reviewed on a regular basis. Every emergency must be followed by a tool box talk given by the HSE Officer on the "Lesson Learned" and must be recorded.
- Emergency Evacuations drill to be carried out every 6 months and report will be submitted to consultant/client.

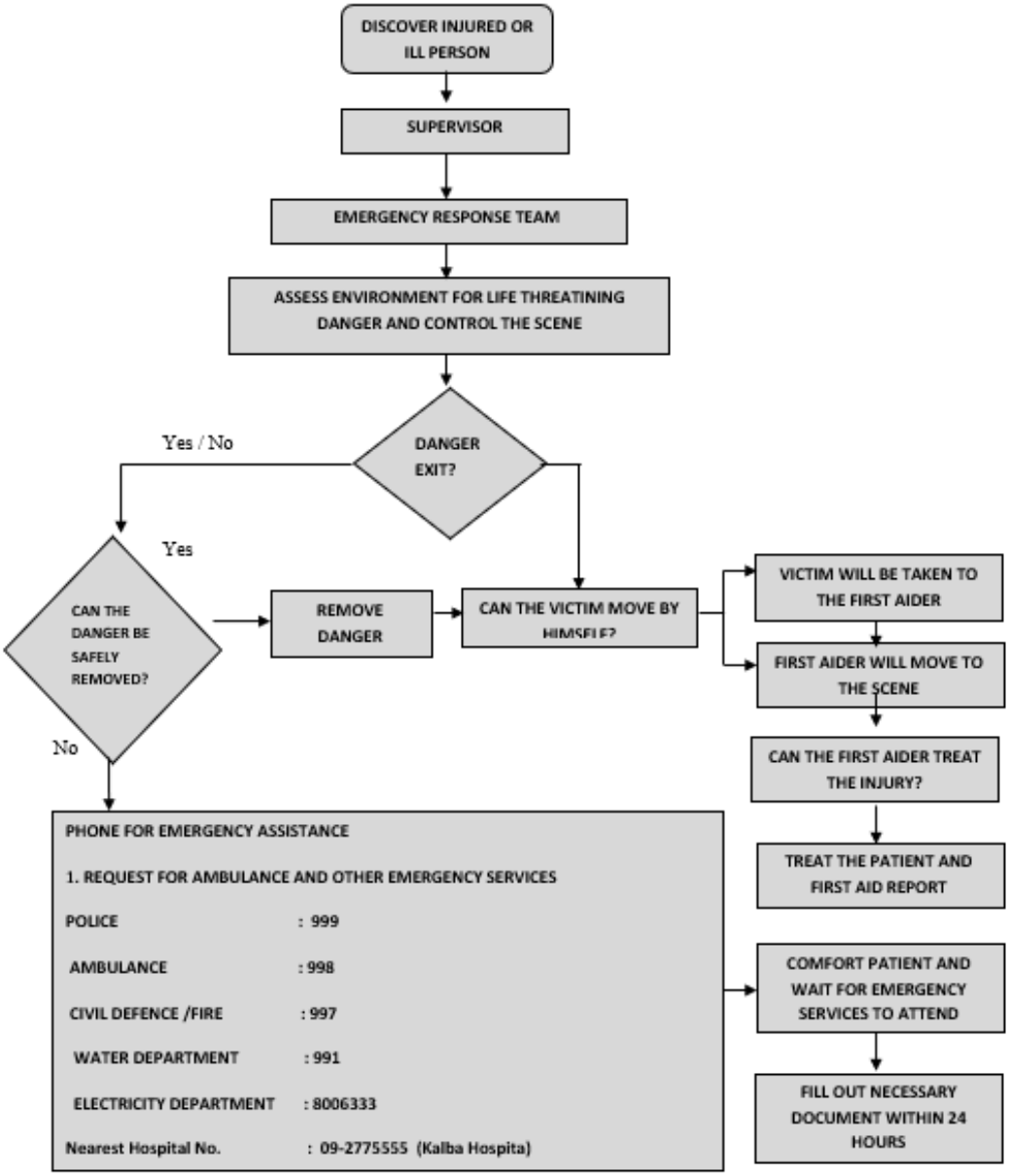
5.7.2 Emergency Layout and First Aid

Emergency layout shall be displayed at the entrance of site offices, on all notice boards on site, Providing details of:

- Routes and egress from the site.
- First Aid Facilities/Kits
- Fire alarm and firefighting equipment
- Location of the Emergency Assembly Area
- Emergency Contact Number

5.7.3 Medical Emergency

If a person is involved or observe any medical emergency, the procedure below must be followed.



The victims should be removed unless there is imminent danger.

- Where available, someone should wait outside the site to direct emergency services to the incident.
- Immediately report the incident to Supervisor /HSE Officer
- Fill out Incident Notification Form within 24 hours of the accident if required.

5.7.4 Burns

If the clothing catches fire:

- Stop, drop and roll (stop when you are, drop to the floor, cover your face with your hands to protect it and your lungs, and roll over and over to smother the flames).
- If someone else, clothing is on fire, wrap the person in a rug or a blanket, if available, tell them to stop, drop and roll.

- Once the fire is out, cut away any loose clothing, but do not remove clothing if it is stuck to a burn.
- Inform your supervisor (if you were not a victim, report the injury to the victim's supervisor.)
- Fill out Incident Notification Form within 24 hours of the accident if required.

5.7.5 Chemical Burns

If a corrosive or other chemical gets to the eyes:

- Flush the eye with water for at least fifteen minutes, lifting the eyelid occasionally
- Follow any other direction in the MSDS.
- If necessary, seek medical attention.
- Inform your supervisor (if you were not a victim, report the injury to the victim's supervisor.)
- Fill out Incident Notification Form within 24 hours of the accident if required.

If a chemical is breathed in:

- Get away from the chemical and into the fresh air
- Follow any other direction in the MSDS and seek medical attention.
- Inform your supervisor (if you were not a victim, report the injury to the victim's supervisor.)
- Fill out Incident Notification Form within 24 hours of the accident if required.

If a chemical is eaten or swallowed:

- Don't eat, drink anything unless directed by a doctor, do not induce vomiting.
- Follow any other direction in the MSDS and seek medical attention.
- Inform your supervisor (if you were not a victim, report the injury to the victim's supervisor.)
- Fill out Incident Notification Form within 24 hours of the accident if required.

5.7.6 Electric Burns/ Electric Shock

If a person is burned by an electrical source:

- Assess the area around the person for potential unsafe conditions such as live- exposed wires, pools of liquid, etc.
- Doesn't touch the person who is in contact with electricity or you will end up in the same position.
- If possible, shut-down electrical supply.
- Stand on something dry and use a dry stick or board – nothing metallic, wet or damp to push the person away from electrical source.
- Get someone else to call ambulance (998) as soon possible while you are helping the person.
- Inform your supervisor (if you were not a victim, report the injury to the victim's supervisor.)
- Fill out Incident Notification Form within 24 hours of the accident if required.

5.7.7 Environmental Pollution Incident

If a chemical is spilled and you are unfamiliar with it or not trained to clean it up or do not have the correct PPE, contact your supervisor and call Emergency Response Team.

No chemical should be dumped or leaked onto the ground or allowed to run off a construction site that might cause pollution.

A pollution incident may be any unauthorized discharge or emission to air, land or water which could impact the surrounding environment or local resident.

Guidance the control of pollution incidents:

- If spilled materials are flammable, eliminate sources of ignition from near the spill.
- If it can be performed safety, stop the source of spill and contain the spill preventing also the spill to go into drains if any.
- If the spill is small or minor (less than 10L) and is not in an environmental sensitive area, the spill will be immediately cleaned- up by onsite personnel and materials used to clean up the spill will be properly disposed of.
- For large spills (more than 10L) or threatening environmentally sensitive areas (e.g. wetland areas, water courses), contact the necessary relevant authorities,
- The area needs to be secured and a control perimeter to be established at a safe distance from the spill.
- Avoid inhalation of vapour by staying upwind.
- If it can perform safely, the HSE Team will supervise the clean-up of spilled materials, hydraulic /lube oil, and chemical spills.

5.7.8 Vehicular Accident

If you are involved in any accident with a vehicle.

- Take care of the medical needs of anyone involved.
- Do not admit fault at the scene. Advise other party that the accident will be reported to the local police.
- Contact the police and do not leave the scene of the accident (unless you have to seek medical attention) and unless being released by the police with the necessary paperwork.
- Report the accident to your supervisor
- Fill out Incident Notification Form within 24 hours of the accident if required.

5.7.9 Severe Weather

Where severe weather conditions are foreseen, information shall be Passed onto the project management and preventive actions shall be Planned where possible.

The following activities should be reviewed when the severe weather Conditions are forecast:

- The use of tower cranes during high wind.
- Dust generation during dry weather conditions.

Following shutdown due to severe weather, checks shall be made on all Structures, false work, scaffolding and excavations for damage prior to Star up.

5.7.10 Explosion

- SAFETY FIRST. Assess the situation to determine the risk of additional explosions.
- If no apparent risk exists, use a fire extinguisher to put out any small fires.
- If a risk exist exists, leave the area quickly by following the evacuation layout and activate the nearest alarm.
- As you leave, notify everyone in the area to get out.
- Close doors and windows behind you to contain the problem.
- Call 997 to report the explosion to the Civil Defence.
- Organise a security cordon around the area.

- Keep upwind of the explosion.
- Handle any medical emergencies.
- Report the explosion to your supervisor.

5.7.11 Fire Emergency

IF you discover a fire:

- Activate the nearest Fire alarm or shout “Fire, Fire, Fire”
- Notify the civil Defence by dialling 997. Give your location, the nature of the fire and your name.

Fight the Fire only if:

- The Civil Defence has been notified of the fire, And
- The fire is small and confined to its area of origin, AND
- You can have a way out and can fight the fire with your back to the exit. AND
- You have the proper extinguisher, in good working order, and you know how to use it.
- If you are not sure of your ability or the fire extinguishers capacity to contain the fire, leave the area

Do not attempt to control the fire if the following conditions exist:

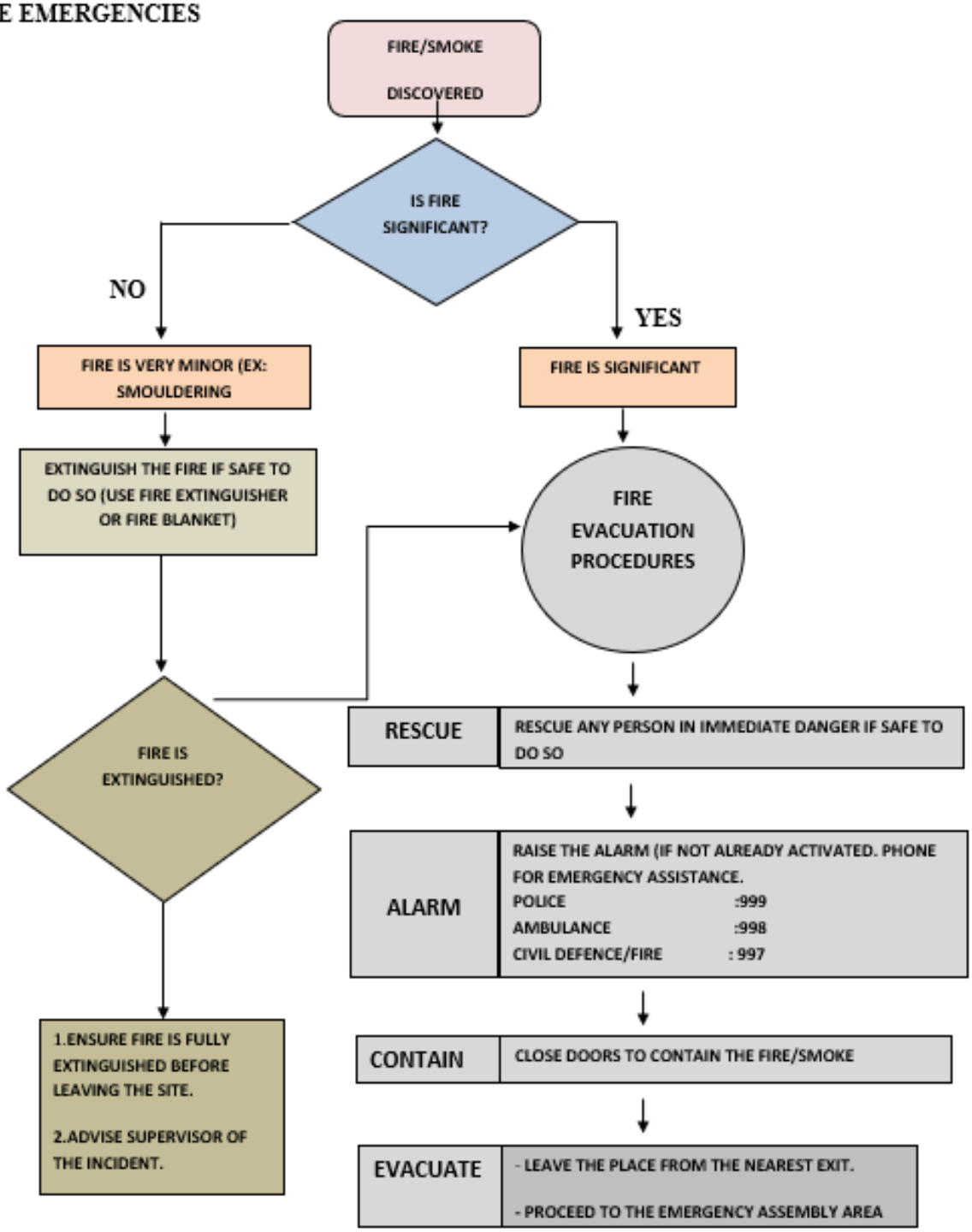
- You don’t know what’s burning.
- You can see it.
- The fire is spreading rapidly.
- The fire might block your escape if you don’t get out immediately.
- You don’t have proper equipment.
- You might inhale toxic smoke.
- Your instincts tell you not to do so.

If any of these conditions exists, it is best to evacuate the building immediately. Crawl low if smoke is present Check doors for heat before opening.

If you hear a Fire Alarm:

- Evacuate the area. Close windows and doors as you leave.
- Leave the building and move away from the exits and out of the way of emergency operations.
- Assemble in a designated area.
- Somebody with authority should undertake a headcount to make sure that all personnel have evacuated the area.
- Remain outside until competent authority states that it is safe to re-enter.

FOR FIRE EMERGENCIES



5.7.12 Emergency Preparedness

Identification of Emergency Response Team:
The Project Manager identifies emergency team at office sand nominates a key person as the Emergency Manager (Team Leader). The team is listed and communicated to all concerned personnel.

Emergency Communication System:
It is the responsibility of the Emergency Manager to define an effective emergency communication system which may include alarms, buzzers etc.

Emergency Service Providers:
The Emergency Manager maintains a list of all Emergency Service Providers, such as Police, Fire/Civil Defense and Hospital/Ambulance. The list is made available to concerned personnel.

Assembly Points:
The Emergency Manager ensures that adequate assembly points are identified at proper places and prominent boards and signs are used for awareness.

Evacuation Routes and Emergency Exits:
The identification of evacuation routes and emergency exits is also ensured by the Emergency Manager (by using signs and arrow marks). Moreover it is also ensured that emergency routes are kept clear up to the exit and assembly points at all times.

Emergency Response Equipment:
The Emergency Manager also ensures the availability of appropriate emergency response system and equipment's.

Possible Emergency Situations:
Possible emergency situations are identified by the Emergency Manager by considering the following:
a. History of emergency incidents
b. Risk and Impact Assessment Records
c. Any emergency situation noted in neighboring or alike organizations.

Emergency Preparedness and Response Drill:
a. To test the effectiveness of emergency preparedness and response, drill is carried out at each place every six month and drill record are maintained (Emergency Drill Record) by Emergency Manager.
b. The drill is coordinated by the Emergency Manager and supervised by the top management.
c. Where practicable, the emergency service providers and neighboring organizations are also involved in the drill activity.
d. The relevant risk and impact assessments are reviewed and if required necessary changes are made.

5.7.13 Post Emergency Actions

Recovering from each emergency situation, the following actions are to be taken:
a. Generate incident report and take actions as per relevant procedure of incident reporting.
b. Review emergency preparedness and response systems and make necessary changes as per lessons learnt.
c. Review relevant risk and impact assessments and make necessary changes, if required.
d. Share emergency details and lessons with emergency response team of other offices/sites, neighboring organizations and other interested parties.

1. **EMERGENCY RESPONSE TEAM**
2. **EMERGENCY SERVICE PROVIDER**
3. **EEMERGENCY DRILL RECORD FORM**

5.8 Manual Handling Operation

5.7.14 Manual Handling Procedure

JD will ensure that manual material handlings are carried out by the experienced and trained personnel. JD will conduct periodical In House Training for manual material handling. Risk assessment will be completed each manual handling operation as per the hierarchy of risk controls (Use mechanical means of lifting, where applicable). Personnel Protective Equipment shall be use for manual handling operation.

5.7.15 Manual Handling Technique.

Good handling technique requires training and practice. The concept of the training in good manual handling technique should be tolerated to particular tasks or situation.

1. Assess the Load.
2. Ensure that travel route is clear and well illuminated
3. Get as close to the as possible
4. Get a secure grip (Wear gloves if necessary)
5. Position feet apart, one foot flat to the floor at the side of the load, the other foot behind, with heel raised.
6. Keep the back straight- maintain the natural spinal curve by lifting the head.
7. Bend the knees – lift using the thigh muscles;
8. Keep the load close to the body- avoid jerking, make a smooth movement;
9. Move the feet – avoid twisting at the waist;
10. Put down, then adjust – side to desired position

5.9 Working at Height

5.7.16 Purpose

To describe the procedure that ensures the health and safety of all persons who work at heights on construction worksites. This procedure applies on work sites where there is a risk of persons falling 1.8 meters or greater, or where persons are working within 2 meters of a live edge or brittle surface. Persons exposed to these hazards shall be height safety trained and competent in the height safety systems being used if control measures such as barriers and handrails constructed to fixed platforms, walkways, stairways, and ladders. Where height safety is identified as a hazard, a Risk assessment shall be completed and a working at heights checklist filled in to assist in the identification and control of hazards and risks associated with working at heights.

Note: Where ladders are used for access and egress and persons are required to be within two meters of a live edge to access the ladder, this procedure will not apply unless a risk assessment dictate.

5.7.17 Fall Protection System

Below mentioned fall protection technique shall be followed when performing the work at height.

- Guardrail system (Top rail, Mid rail and Toe boards)
- Personal Fall Arrest System (These consist of an anchorage connector, full body harness.)
- Position Device System (Full body harness to be set up that a worker can free fall no farther than 2 feet secured to an anchorage rigid of support.
- Safety Monitoring System (competent person to monitoring the safety of the worker).

- Safety Net System. (Safety net shall be installed as close as practicable under the walking / working surface and never more than 30 feet below level)

Warning line safety system

5.7.18 Training

All personnel working at heights an employee, either JD or visitor must be appropriately trained. Appropriate training may include:

- Working at Height Safety Training
- Scaffolding Training
- Elevated Work Platform (EWP)Training
- Proper usage of fall protection equipment's and maintenance training
- Emergency rescue training

5.7.19 Emergency response

Where a fall restraint or fall-arrest system is used, provisions shall be made to enable the safe rescue of a person who falls. These provisions should include:

- An effective rescue plan for that site is developed prior to work commencing
- Personnel are appropriately trained in height rescue and first aid and
- Appropriate rescue equipment available

The rescue plan should enable the person to be removed from the suspended position as quickly as possible to prevent the fallen person developing suspension trauma.

5.10 Fixed & Temporary Electrical Installation

The Government of Sharjah Electricity, Water & Gas Department (SEWA) – Regulations for Electrical Installation Works issues the applicable law in the Emirate of Sharjah.

5.7.20 Control of Fixed and temporary electrical Installation.

A 220/240 Volts power supply will be used at site and requirement should be in accordance with EMPLOYER standards.

- All electrical equipment shall be tagged, tested, and inspected.
- All electrical installations shall be equipped with fuses and ELCB's.
- All distribution boards shall be equipped with fuses and 30mA ELCB's.
- Industrial sockets to be used for all electrical power tools/machineries.
- All plugs and sockets shall be of a reasonable minimum standard IP44.
- All installations shall have adequate insulations.
- A team of electricians shall be permanently on the site to secure and guarantee electrical installations.

Electrical equipment which are hired shall be visually inspected by the recipient and the documentation checked by competent person.

- Serial numbers match the inspection documents and equipment.
- Inspection documentation states that the equipment is in safe condition.
- The visual inspection will consist of:
- Visual check for damaged leads & insulation, cracked case, loose cable grips, etc.
- Visual inspection of documentation.
- Calibration certificates if applicable.

- Inspection stamps or sticker labels.
- Colour code for the tools will be provided.

The inspection and test will be done by competent person and recorded. The record of this inspection and test shall be attached to the equipment.

Tag out Lock out Procedure

Tagging and Locking is done to prevent accidents caused by operating machine, working temporary isolated electrical equipment's etc. unintentionally when work / maintenance is being carried out in these areas. To keep a track of this, a log is to be completed. The safety tagging and locking tracking log copy is given to site HSE officer and Project manager for information.

Among applicable safety procedures, Danger Tag, Out of Service Tag, Caution Tag, Information Tag and Lock Procedure may be applicable on this project.

Safety Lock Out

Only individual locks shall be used to avoid confusion and misunderstanding. The key of the lock shall remain in possession on the person placing the lock.

If not, Instruction shall be followed contained in contract document and applicable procedure.

A master series of locks to be used specifically for lockout may be provided to each craft that requires them. Master keys for the craft shall remain in the possession of the Site Electrical Engineer. Locks and lock system shall be in accordance with contract requirements.

Work on / near Energized Electrical Equipment's

This procedure establishes minimum requirements for work on/near energized un-insulated electrical conductors or terminations.

The term live installation work is defined as any work in which an un-insulated part of any energized conductor of terminal may be touched with any body part or with any tools or equipment's.

The term proximity work is defined as any work close to energized. Un-insulated conductors or terminals such that contact with any body part or tool may occur with unexpected movement. The placing of barrier for protection may in itself be proximity work, thus requiring a pre-plan. Once barriers are in place, the remaining works may no longer fall into proximity work. However, barrier removal may fall again under proximity works.

Commencing of Live Electrical works

Personnel shall never work on live equipment alone. In addition to the electrician doing the job, there shall be another electrician standing by. A supervisor should be attendance while this being carried out, and he must know how and where to isolate the equipment in case of need. Before starting the job, the exact voltage shall be known. This is important as it defines the type of personnel protective equipment's required for the work.

Work Platform and equipment used near energized equipment's shall be properly grounded. Work on live equipment scan be as safe as work on isolated equipment providing the following is observed.

- There shall be through knowledge of the equipment and the job to be done.
- If there is any doubt, advice from supervisor or responsible person shall be sought.
- The work shall be correctly planned before the job started.
- Protective equipment shall be used correctly.

5.11 PERSONAL PROTECTIVE EQUIPMENT

5.7.21 General

Personal Protection Equipment (PPE) comprises devices for individual use, intended for protecting the worker's physical integrity against the normal aggressions of his work.

The JD and all subcontractors will supply all the PPE necessary for the proper and safe carrying out of the Works. The equipment must always be in good working condition and suitable for the activity in question.

The use of the PPE by employees is compulsory in activities where it is prescribed. The refusal to use this equipment in such a situation can result for the employee in question being dismissed or access to specific areas may be refused. The use of PPE supplied by the Employer is a Legal Requirement under the Federal Law No. 8, 1980; employees who do not adhere to this Legal Requirement will be sanctioned.

The PPE will be regularly inspected and maintained in good condition.

The HSE Officers will check that the specified protection equipment is available, is used and that the personnel using them are fully informed and instructed on the correct methods of use. The HSE Officer will report to the concerned Supervisor any operative not using his PPE correctly. He will also record the same on his report.

5.7.22 Main PPE Items and their uses

PPE is all equipment which is intended to be worn or held by a person at work which him/her against one or more risks to his/her health and safety.

JD imposes certain duties on the following staff.

Project Manager

- Must Ensure that all PPE to all employees who may be exposed to a risk to their health and safety and provide training in its use.

Engineer and Supervisors

- Must ensure that all PPE is properly stored and maintained in a clean, efficient and working order.
- Must ensure all their staffs are trained to use the PPE.
- Must ensure all their staff use the appropriate PPE when necessary.

Employee

- Must cooperate with the management and use the PPE supplied by the company.
- Must report any defect to their PPE.

Head Protection, Eye Protection, Hearing Protection, Foot Protection, Hand Protection, Body Protection, Respiratory Protective Equipment.

All Engineer/Supervisors/Foremen will wear White coloured hard hat with Green coloured visibility vest.

Riggers will wear RED coloured Hard Hat and Green coloured visibility vest.

Workers will wear yellow coloured Hard Hat and Green coloured visibility vest.

5.12 Plant and Equipment

5.7.23 Responsibility

Site Plant In charge responsible for providing safe plant in compliance with HSE requirements at all times on the site. He will ensure timely renewal of certificates and monitor maintenance of the equipment's. He will enforce the HSE Plan contents for the plant & Equipment's. He will also responsible to check the subcontractors provided plant equipment within the site and is bound to keep records for audit purposes. He will include in his inspection, all subcontractors and vendors provided plant and equipment and are safe to work and will be fully authorised to reject and execute any plant, equipment from the site which are not safe to use or can cause any further damage to property or personal.

The HSE Dept. is empowered to take all and any action as might be required to ensure health and safety at this particular location.

5.7.24 PROCEDURE

In order to ensure that plant, equipment & machinery is safe and appropriate for the task being undertaken it is important that the basic control measures within this procedure are followed at all times.

Inspection of Plant, Equipment & Machinery

All plant, equipment and machinery shall be inspected on arrival to site and checked to ensure that it is in a serviceable and operational condition through the plant pre-mobilization checklist attached in the appendix. The plant shall have markings to easily identify the responsible JD. Each 'Approved Vehicle' shall display a colour coded pass which shall be issued by Workshop Engineer and will be changed every three months. The colour scheme will be displayed at the site entrance. Plant that fails inspection or does not display the relevant colour coded pass will be removed from site use.

Periodic inspections carried out and recorded by a competent person all necessary documentation as may be required shall be available at the time of inspection, for example:

- Test Certification
- Calibration Certificates
- Servicing Records
- Any statutory records
- Third Party Certificates
- Operator License

The types of plant & machinery that may under this schedule are:

Cranes, Mobile Plant, etc.

Records of inspections shall be maintained as necessary and undertaken by an appointed competent person and recorded on plant/equipment Inspection log (Attached in the appendix)

Any plant, equipment or machinery, which does not have the required documentation, shall not be accepted for use on project and shall be returned to the supplier or placed in quarantine.

Supplied or Hired Plant, Equipment & Machinery

Any company that uses a supplier of plant, equipment and machinery must also ensure that this procedure is still applicable to them. The Project Manager shall ensure that he makes arrangements for the supplier to carryout regular maintenance and updates in regards to certification and statutory documentation as may be required.

Operators of Plant & Machinery

All operators of plant, equipment and machinery are to be trained and competent to operate the respective plant or machinery to hold where applicable certification, operators' cards or permits and to have attained the legal age as required by legislation. Copies of all operator certificates / cards shall be maintained at the site office for monitoring purposes.

There may also be a requirement for the issue of a client approval system and if this is required it shall be obtained prior to the operator starting work.

Damaged / Defective Plant & Machinery

All damaged / defective plant, equipment or machinery shall be removed from service and placed in workshop until any repairs are carried out and it has been confirmed as fit for purpose. Examples of defective plant

include unguarded moving parts (Drive belts and wheels). Under no circumstance shall unauthorised persons make temporary repairs. Repairs shall only be undertaken in an approved workshop area.

Manufacturers & Suppliers & Statutory Requirements

All manufactures and suppliers of plant, equipment & machinery must ensure compliance with statutory requirements to ensure that plant, equipment and machinery delivered to project is safe to use.

Unsatisfactory Plant / Machinery Suppliers

If a supplier continues to provide unsatisfactory or unsafe plant, equipment & machinery they shall be suspended from supplying to any Company on the project.

Environment

All static items of plant, equipment and machinery must be placed on a drip tray or non-porous surface in order to prevent oil and fuel spillages from contaminating the ground.

Guarding

Controlling the risk often means guarding the parts of machines and equipment that could cause injury.

- Use fixed guards wherever possible, properly fastened in place with screws or nuts and bolts which need tools to remove them.
- If employees need regular access to parts of the machine and a fixed guard is not possible, use an interlocked guard for those parts. This will ensure that the machine cannot start before the guard is closed and will stop if the guard is opened while the machine is operating.
- In some cases, e.g. on guillotines, devices such as photoelectric systems or automatic guards may be used instead of fixed or interlocked guards.
- Check that guards are convenient to use and not easy to defeat, otherwise they may need modifying.
- Think about the best materials for guards - plastic may be easy to see through, but can be easily scratched or damaged. If wire mesh or similar materials are used, make sure the holes are not large enough to allow access to the danger area. As well as preventing such access, a guard may also be used to prevent harmful fluids, dust etc from escaping.
- Make sure the guards allow the machine to be cleaned and maintained safely.
- Where guards cannot give full protection, use jigs, holders, push sticks etc to move the work-piece.

Safe Maintenance Work

Many accidents occur during maintenance work. Controlling the risk means following safe working practices, for example:

- Make sure the guards and other safety devices (e.g. photoelectric systems) are routinely checked and kept in working order. They will also be checked after any repairs or modifications by a competent person.
- Check what the manufacturer’s instructions say about maintenance to ensure it is carried out where necessary and to the correct standard.

- Routine daily and weekly checks may be necessary, e.g. fluid levels, pressures, brake function, guards. When you enter a contract to hire equipment, particularly a long-term one, you will need to discuss what routine maintenance is needed and who will carry it out.
- Where possible, carry out maintenance with the power to the equipment off and ideally disconnected or with the fuses or keys removed, particularly where access to dangerous parts will be needed.
- Isolate equipment and pipelines containing pressurised fluid, gas, steam or hazardous material. Isolating valves will be locked off and the system depressurised where possible, particularly if access to dangerous parts will be needed.
- Support parts of equipment which could fall.
- Allow moving equipment to stop.
- Allow components which operate at high temperatures time to cool.
- Switch off the engine of mobile equipment, put the gearbox in neutral, apply the brake and, where necessary, chock the wheels.
- To prevent fire and explosions, thoroughly clean vessels that have contained flammable solids, liquids, gases or dusts and check them before hot work is carried out. Even small amounts of flammable material can give off enough vapour to create an explosive air mixture which could be ignited by a hand lamp or cutting/welding torch.
- Where maintenance work has to be carried out at height, ensure that a safe and secure means of access is provided which is suitable for the nature, duration and frequency of the task.

5.7.25 Hand tools

Site Supervisor / Foreman will ensure that right hand tools are used for right job in correct manner. All hand tools shall be maintained in a safe and proper working condition. No homemade or modified tools shall be used.

The applicable UAE legislation is the "Ministerial Order No (32) Year 1982; Articles (10) & (13). The Federal law No (8) Year 1980 – Article (96) applies too.

- Tools designed with guards, handles.
- Employees shall be trained/ instructed in the proper use of hand tools.
- All defective tools shall immediately be removed from service for repair.
- Hand Tools shall be inspected for damage or defects daily and prior to use.

5.7.26 Power Tools

All portable power tools and equipment shall be maintained in a safe and proper working condition. No homemade or modified tools shall be used.

The applicable UAE legislation is the "Ministerial Order No (32) Year 1982; Articles (10) & (13). The Federal law No (8) Year 1980 – Article (96) applies too.

- Tools designed with guards, handles and electrical trip switches including dead man switches shall be equipped with such devices at all times. These shall not be removed or by-passed.
- Employees shall be trained/ instructed in the proper use of Power tools.
- All defective tools shall immediately be removed from service for repair.
- Tools shall be inspected for damage or defects daily and prior to use.

- Extension cords and air hoses shall be protected from damage and shall be routed through the job in such a way that they do not form a tripping hazard and are not subject to damage or are damaged by any activity.
- All power tools will be periodically tested and certified by a competent Electrician
- Each Power tools will bear a safety sticker with colour code highlighting next date of inspection as well as register will be maintained.
- Electrical tools will be connected to proper / approved power source and means of proper plug / sockets.
- Proposed usage of power for power tools is 220 Volts (AC) and the distribution boards and boxes shall be fitted with Residual Current Devices/ ELCBs. Where practical, 220V power tools should be replaced with 110V or battery-operated tools.
- Extension cords and air hoses shall never be placed on stairs; walkways, grate floor, ground, or floors where these can create a hazard or suffer damage.
- Cords and air hoses shall, as far as is practically possible, never be placed on the ground or walkways, on surfaces or emergency exits.
- Air hoses shall be fitted with whip checks at each coupling joint.
- Job required Personnel Protective Equipment's should be used by workmen.

5.13 Housekeeping

- Good housekeeping is considered a sign of an efficient and safe work place that will generate a positive attitude from all site personnel and will assist in preventing incidents. The following rules on good housekeeping will be strictly enforced:
- Walkways, stairways, passageways, exeunt and access roads will at all times be free from any obstruction.
- No rubbish/ debris shall be left lying about. Bins / chutes shall be used to clear rubbish from Site at regular intervals.
- Work areas shall be maintained clean and free from all debris, trash, and rubbish that could results in potential hazards to personnel.
- Materials are to be properly placed/ stacked adjacent to the work areas.
- Combustible, non-combustible, and dangerous products are to be stored separately in compliance with the Local Regulations, or other equally effective means of control. With respect to hazardous materials, personnel will be informed of the requirements of COSHH.
- All storage and Construction Sites shall be kept free from accumulation of combustible materials.
- Accumulation of flammable and combustible liquids on floors, walls etc. is prohibited. All spills of flammable and combustible liquids shall be cleaned up immediately.
- Tools, materials, extension cords, hoses, or debris shall not be left to become a tripping hazard.
- Protruding nails in scrap boards, planks, and timbers shall be removed, or hammered in or bent over flush with the wood unless placed in trucks or containers for removal.
- Hazardous and Non-Hazardous waste will be segregated and transported off Site by an approved JD licensed by the Government to an approved area for disposal.
- Work and rest areas shall be inspected at regular intervals for adequate housekeeping and any unsatisfactory findings will be recorded on the Inspection Report.
- An adequate water supply network will be installed on Site. Storage, handling, and use of water will be according to hygienic methods.

- An adequate number of toilets and urinals will be provided on site for the use of personnel in accordance with the safety and health standards. The toilet areas will be maintained clean and tidy at all times.

5.14 Lifting Equipment and Lifting Operation

5.14.1. Lifting Procedure

In all cases, no lifting operations shall be permitted over any areas where personnel are working. Clearly designated exclusion zones shall be established for all lifting operations; the only person allowed near this zone will be the designated Rigger / banks man. The Rigger/ banks man shall at all-time wear a red hat & high visibility vest.

Only properly manufactured lifting gear which has been tested and certified, serial numbered and marked/stamped with its safe working load (SWL) will be allowed on site.

- Crane should have a valid 3rd Party Certificate (Every One Year).
- Sling, Lifting Tackles should have a valid 3rd party certificate (every 6 months)
- Prescribed Lifting plan to be available for prior each lift.
- Competent Person inspecting the crane should have a checklist record and to produce during investigation/Audit.
- Operator should be third party trained and possess a valid license.
- Banksman/Rigger designated for the activity should be certified and competent.
- Climate/wind condition to be assessed prior lifting.
- Load charts are to be available in the cabin
- All safety and override devices to be operational
- Lifting Supervisor should be present during the lifting operation.
- Lifting PTW must be present during the lifting operation.
- Monthly Lifting equipment and accessories to be carried out and log will be maintained for the same.

5.14.2. Crane and rigging safety

Crane set-up / ground stability:

One of the critical factors of proper crane setup is a firm-supporting surface.

For maximum capacity, the crane shall be level. However, to maintain a level condition, the ground surface shall be adequate to support the dynamic loads of a working crane.

Four basic elements are to be considered

1. Total imposed load
2. Supported surface area
3. Ground stability
4. Wind velocity

5.14.3. Load handling

- Load weight: No crane shall be loaded beyond its rated capacity
- Attaching the load. No open hooks shall be used for lifts higher than 1m. Hooks used for lifts in excess of 1m shall have hook safety latches or shall be self-closing hooks
- Moving the load: the operator shall determine that the crane is level to Within 1° degree and, where necessary, is properly cribbed and blocked
- The operator shall position the hook over the load in such a way to prevent load swing and tag line should be use.

5.14.4. Mobile cranes

The operators shall be responsible for:

- Proper placement of the crane in relation to the load to be handled and the Landing area to obtain rated lift capacity.
- Levelling the crane to within 1 degree of level and rechecking the level a Minimum of three times, during the 8 hours working shift.
- The proper placement and use of outriggers, where provided, for all its lifts.
- The determination of stable or unstable ground or footing. Additional floats, Cribbing, timbers or other structural requirements shall be fitted.
- The applicable UAE Legislation is contained in the Ministerial Order No. (32) Year 1982 – Article (20). Guidance

5.14.5. Rigging requirements

a. **General**

All rigging equipment shall be inspected prior to each shift and as necessary during the shift to ensure safety. Damaged or defective slings shall be removed from service. Persons must not pass under suspended loads. The JD reserves the right to remove from service and or destroy any damaged or defective rigging equipment. Refer also to the applicable UAE Legislation contained in the Ministerial Order No (32) Year 1982 – Article (20).

b. **Condition of lifting equipment**

- All rigging devices including slings shall have permanently marked identification stating size, grade, rated capacity, and manufacturer.
- Rigging equipment not in use shall be removed from the immediate work area when not in use and correctly stored.
- Shop made grabs, hooks, clamps or other lifting devices shall not be used unless proof-tested to 125% of their rated load by an approved testing agency. Approved devices shall have the rated capacity identified and permanently affixed.
- Slings shall never be left lying on the ground or otherwise exposed to dirt.
- Eyes in wire rope bridles, slings, or bull wires shall not be-formed by wire clips or knots.
- Protruding ends of strands in splices on slings or bridles shall be covered or blunted.

c. **Safe operating practices**

- Knots, bolts, or other makeshift devices shall not shorten slings in use.
- Wire ropes slings shall be padded or softeners shall be used for protection from damage due to sharp corners.
- Slings used in a basket hitch shall have the loads balanced to prevent slippage.
- Loads handled by slings shall be landed on cribbing or dunnage to avoid damaging the slings by pulling under or being crushed by the load.
- Slings subjected to shock loading shall be immediately removed from use and destroyed.
- When U-bolt wire clips are used, the manufacturer’s instructions shall be used to determine number and spacing of clips.

5.14.6. Colour Coding of Equipment's/Accessories

Purpose

The purpose of this procedure is to achieve a higher level of safety for hoisting equipment and Lifting gear
Colour codes:
The colours used throughout the year are shown below. The new code has to be applied on all in this procedure mentioned equipment at the first working day of the new period.

GREEN -	**1st quarter of the year**
WHITE -	**2nd quarter of the year**
BLUE -	**3rd quarter of the year**
YELLOW -	**4th quarter of the year**

Cranes

Except for a visual check for all major mechanical and hydraulic systems the responsibility remains in the hand of the operator. The crane shall have a valid third-party certificate. Without this certificate the crane cannot operate. If the visual inspection and the valid certificate are in place, the new colour can be applied on the top end of the hook with spray paint.

Synthetic Fiber Web Sling

A Synthetic fibres web sling comes in many different sizes representing the SWL (Safe Working Load). The wider the sling, the more weight it can take. The number of vertical placed stitches are representing the weight (e.g. 2 stitch lines = 2 Ton, 6 stitches = 6 Ton).
For that reason, Rigging Supervisor or competent rigger will have to check each item separately and colour code after approval.

Sling identification

Synthetic fibres web slings must be permanently identified with the:

- Manufacturer's name or mark,
- Manufacturer's code or stock number,
- Working load limits for the types of hitches permitted, and
- Type of synthetic web material.

Chain Sling

Rigging Supervisor or competent rigger will have to check each item separately and Colour code after approval.
Sling identification
An alloy steel chain sling must be permanently identified with:

- The size;
- The manufacturer's grade and the S WL;
- The length and number of legs, and
- The name or mark of the sling manufacturer.

Wire Rope Sling

Rigging Supervisor or competent rigger will have to check each item separately and Colour code after approval Sling identification:

A wire rope sling with a swaged or poured socket or a pressed fitting must be permanently identified with:

- Its working load limit;
- The angle upon which the WLL is based, and
- The name or mark of the sling manufacturer.

Shackles

Shackles come in different types. Mainly used are the Bow Shackle, Screw Pin Type and the D Shackle Screw Pin Type. The Bow-type is used for two chain slings and the D-type is used for one chain slings.
For that reason, Rigging Supervisor or competent rigger will have to check each item separately and colour code after approval.
To check the screw pin type Shackles, the thread of the Pin and the Shackle should be in good order and may not be damaged (the pin should go in all the way). Also, the backlash on the pin may not be too big

5.15 Welfare and Site Accommodation.

5.15.1 Health Policy

JD and subcontractors Health Policy are to:

- Identify and evaluate health risks related to its operations that potentially affects its employees or the public.
- Implement program and appropriate protective measures to control such risks, including appropriate monitoring of its potential affected employees.
- Provide positive preventive programs designed to enhance employee's well-being, fitness for work, productivity and personal safety.
- Communicate in a reasonable manner to potentially affected individuals or organizations and the scientific community knowledge about health risks gained from its health programs and related studies.
- Determine at the time of employment and thereafter, as appropriate, the medical fitness of employees to do their work without undue risk to themselves or others.
- Provide or arrange for medical services necessary for the treatment of employee occupational illness or injuries and for the handling of medical emergencies.
- Comply with all applicable laws and regulations and apply responsible standards where laws and regulations do not exist.
- Undertake appropriate reviews and evaluations of its operations to measure progress and to ensure compliance with this health policy.

5.15.2 Medical Assistance and First Aid

The proposed medical activities as outlined below in accordance with local authorities and Company requirements:

- The workforce will be medically checked before by a licensed medical doctor.
- Regular medical checks will be conducted to employees every two years and/or on Doctor Request.

JD specialized personnel, in accordance with Project requirements, will provide first aid assistance at job site.

First Aider will provide first aid services in the JD Site Infirmaries, for all the site work force.

In the infirmary will be an Infirmary Logbook in which the first aid personnel will record all the injured visited, the nature of injury, the drugs provided and the prognosis, and serious illness events.

Every new recruit will undergo a full Pre-Employment Medical Assessment to ascertain the fitness and health of personnel prior to commencing employment.

Repeat examinations may take place at a frequency dependent upon the person's activity.

For persons working in critical and high-risk tasks, JD should also request a special additional evaluation at the Safety Insurance mutuality that his employer belongs to in order to certify the person's aptitude for this work.

Access to areas where occupational exposure of employees to noise falls within the defined ranges of 80 dB(A) continuous Periodic tests will be performed in order to ensure that occupational noise exposure will not exceed 80 dB(A) averaged over any eight-hour period in construction site and 60 dB(A) in the office.

5.15.3 Smoke, Drugs and Alcohol policy

JD and subcontractors shall follow the Smoking & drug policy & participate in the written substance abuse program. JD and sub-contractors personnel will be instructed in order to be aware of the substance abuse policy and the zero-tolerance level allowed. Smoking policy is attached in Appendix-6

JD and subcontractors will organize a preventative drugs and alcohol prevention program with random samples to the employees, respecting the limits defined by local regulation.

Confirmed positive test results indicating the presence of a prohibited substance in an employee's urine or blood are considered sufficient evidence of a violation of this policy, resulting in the termination of the employee, and preclude the hiring of a prospective employee.

JD and subcontractors authorized representatives could make periodic, unannounced test to project employees in any work location. Work locations include project sites, offices, rooms.

Any person who will be or will appear to be under the influence of alcohol or controlled substance will be immediately removed from the premises and will participate in a medical examination. Severe disciplinary actions will be taken in case of positive results of the examination including removal from site.

The use, possession, distribution or sale of illegal drugs, controlled substances, alcohol, firearms, explosives, and other life-threatening devices will be absolutely prohibited.

Smoking and possession of matches or lighters will be strictly forbidden, except in designated smoking areas, where permitted by JD.

It is strictly forbidden to smoke in those places where the "No Smoking" sign is posted.

None intrinsically safe lighters shall not be permitted to be brought into "No Smoking" areas.

All supervising personnel shall evaluate, in co-operation with JD and subcontractors Supervisors and HSE Officers, whether it is necessary to have temporary "No Smoking" conditions during the performance of specific tasks or the handling of flammable explosive-dangerous materials or equipment.

All personnel shall be aware of the risks related to smoking in prohibited areas. In all smoking permitted areas everybody will care to properly extinguish their cigarettes, cigars, pipes into appropriate ashtrays.

5.15.4 Site Facilities

Temporary Site Facilities means the buildings and other structures of temporary nature, like offices, locker rooms, warehouses, canteens, infirmary etc. as required for the execution of the works. The rest, dining areas should be sufficient to accommodate the total manpower on site. Cool rooms or other suitable arrangements will be provided for storage of food for site workers.

The temporary Site facilities will be built-up in compliance with all applicable laws.

JD and subcontractors are responsible to comply with the following requirements everyone for its own facilities and for its own subcontractors.

Rest Area

Provide sufficient and conveniently accessible shelter for protection against bad weather and for keeping personal clothing.

Rest Area shall be kept clean and must not be used to store tool, materials, etc.

Fire Extinguishers

Each area will be fitted with suitable number and type of fire extinguishers and if necessary, with adequate smoke/heat detectors.

Water

Drinkable water will be made available to Site personnel. Water shall be obtained, conveyed, treated, stored and distributed in a close system. If the municipal water supply is not available then transported water shall be obtained from an acceptable approved source, delivered in a properly designed and dedicated water tanker. Drinking water quality will be ascertained and certified by the competent authorities. Every water tap will have a sign indicating according to the case, "drinkable water" or "undrinkable water". Routine check of water quality will be undertaken and documents maintained.

Offices

Offices buildings will be well ventilated and lit, adequately furnished and provided with sockets for office machines, (typewriters, calculating machines, personal computers, photocopy machines etc.) with earth connection, with suitable temperature both during winter and summer (heating-air conditioning).

Wash-basins

Wash-basins will be fitted with water tap.

Toilets

The toilets will be provided with partition walls and doors that can close from inside. The sanitary conditions of the premises, piping and drains-pipe (sewages, etc.) will be in compliance with the provisions suggested by the sanitary engineering and of the law. Different toilets will be provided for men and women.

5.16 Scaffold and Ladders

5.16.1 Scaffolding

The SCAFFTAG system shall be implemented. Red Tag will be attached to Scaffolding structure during erection. Any alteration, dismantling, unsafe scaffold should be done by competent scaffolders only. Green Tag will be attached to Safe Scaffolding Structures and other teams to permit other teams to work on this location.

Certified Scaffold supervisor should be available during erection, alteration and dismantling of Scaffolding.

Certified Scaffold Supervisor shall inspect and sign the tag after completion of erection or if any alteration is made.

Specific attention will be paid to prevent falling materials, and adequate measures shall be taken for working on scaffolds on extreme heights e.g. netting, fastening, doubled safety for hanging scaffolds (safety rope and rope for moving up/down), perimeter control.

The law applicable is defined in the "Ministerial Order No. (32) Year 1982; Article (19-b).

5.16.2 Construction of scaffolds

Construction of scaffolds is to allow people to execute their works at height in a safe way. All scaffolds shall be tagged at each access point (ladder), indicating whether it can be accessed or not. The red tag will indicate that the scaffold is unsafe for use until the scaffold has been inspected, corrected, and re-inspected until it passed for safe use.

When the scaffold is safe and inspected, a green tag card will be inserted, indicating the date, name and signature of the authorised and competent scaffold inspector.

Red Tag scaffold will be inserted for any unsafe scaffold, during erection of scaffold by competent scaffolders, dismantling and alteration.

A competent scaffold inspector will inspect all scaffolds that will remain in use not longer than a week.

If no green Scaff tag is connected to a scaffold, or if the interval since the inspection exceeds one week the scaffold is unsafe to use. The scaffold will be used again only after proper inspection and adequate tagging.

In addition, all scaffolds shall be re-inspected and confirmed as safe to use after bad weather or other incident that could affect its safety, e.g. high winds.

All scaffolds shall be built on a stable base. If necessary, special measures will be used, such as spread beams under the supports.

All scaffolds platforms will be able to carry a minimum required load to allow safe working. If scaffolds are to be used to lift heavy materials, a calculation note, proving the construction strength will be prepared.

After the approval, the Scaff tags can be inserted, indicating safe access. All work floors will have railings and toe-boards.

All accesses to platforms will be by means of ladders or stairs (inside or outside the scaffold). No access is allowed by climbing over railings.

When raising or lowering materials, scaffolders must be clipped on at all times, or working on a safe handling platform with a double guarded-rail provided.

Neither equipment nor material shall be thrown up or down "bombing".

5.16.3 Scaffold safe system of work.

Preparation:

The work should be assessed to ensure that all health and safety risks are identified and suitably controlled. Supervision should aim to organise, plan and manage their work to minimise any risk, with a goal of zero Incidents.

Scaffolders should be selected who have appropriate attitude, aptitude, fitness, training, and experience for the particular task to be completed, and have received appropriate and recorded training.

Supervision should be provided that is appropriate to the work situation and the number and skills of the work team.

All scaffolders must wear and use the minimum fall arrest equipment, which has been inspected prior to use and should be hooked in separate anchor point other than scaffolding structure.

5.16.4 Method work

a. Erection

Scaffolding should be completed progressively with scaffolders installing a single guardrail on all lifts to provide protection whilst at work; Scaffolders must be clipped on when installing components outside of guardrail. Traversing along scaffolding elevations outside of the single guardrail must be limited to the maximum length of materials used. Separate anchor point to be provided.

b. Alteration to scaffolds

The single guardrail must remain to ensure that scaffolders are protected when carrying out alteration works. Scaffolders should be working from a minimum fixed three-board platform or more for wider structures when carrying out these operations. After Alteration Scaftags should be signed/Updated by Scaffold Inspector.

c. Dismantling

All dismantling activities should be carried out progressively, reversing the erection process. Therefore, guardrails should be included as early as possible in to the erection process and removed as late as possible during dismantling, reducing the need for scaffolders to climb the scaffold structures.

d. Decking

Scaffolders should use as a minimum 600mm wide platforms placed centrally (e.g. 3 x 195mm scaffold boards)

Transoms and bearers i.e. every 1.5 m or 1.2 m as appropriate should always adequately support boards used for decking.

5.16.5 Access Ladders.

Adequate access ladder shall be provided to the scaffold platform. Access ladders to be secured top and bottom. All aluminium access ladders to be extended 1.10 mtr. above the landing platform. Signage will be provided for identifying the access easily and ladders will keep clean and tide to avoiding slip and trip hazards. Scaff tag will be installed near by the access area for identifying workers status of the scaffold whether it is unsafe to use, safe to use or under erection. Access ladders will be inspected and colour coded.

5.17 Form Works and Structures (False works)

5.17.1 General

Formwork and Structures are temporary structures that are built to support parts or the whole of a permanent structure until it is self-supporting. Individual components of formwork and false work, such as scaffolding, are plant. Once assembled, the components form the temporary structure. Some formwork and false work systems are designed to remain with the permanent structure.

5.17.2 Risks associated with formwork and false work

Some examples of formwork and false work hazards include:

- Formwork or false work collapse (before, during and after placement of concrete or the structural members to be supported)
- People falling from height
- Falling objects
- Slips and trips
- Noise
- Dust
- Manual tasks.

5.17.3 Assessing the risks Form works and Structure

When assessing risks involved with formwork and false work you should consider things such as:

- The type of form or false work elements to be used
- The height of the formwork and/or false work to be erected
- The size of the formwork deck or any decks included in the false work
- The location of intermediate working decks
- The scheduling of the work
- The layout of the workplace, including whether there are fall hazards both for people and objects
- The number of people involved
- What plant and equipment will be used and the skill and experience required to use it safely
- What exposures might occur, such as noise or ultra-violet (UV) radiation
- Local weather conditions, particularly wind forces.

It should then be possible to select the most suitable work methods and arrangements to eliminate or minimise risks, for example:

- Items of plant and equipment – large structures may require scaffolding or mobile plant to work on suspended floors
- Minimise the working heights for persons erecting and dismantling the formwork and/or false work
- Safe temporary work platforms where work at height is required
- Plant and material placement and storage, so as to minimise manual handling.

5.17.4 Controlling the risks Form works and Structure

The ways of controlling risks are ranked from the highest level of protection and reliability to the lowest. This ranking is known as the *hierarchy of control measures*.

The duty holder must always aim to eliminate a hazard first. If this is not reasonably practicable, the risk must be minimised by using one or more of the following:

- *Substitution* – for example, use a type of formwork that can be preassembled on the ground and then lifted into position by a crane – this reduces the need to work at height and therefore the risk of people or objects falling. Using a crane to lift formwork or false work components instead of manual lifting minimises the risk of musculoskeletal disorders.
- *Isolation* – use concrete barriers to separate pedestrians and powered mobile plant to reduce the risk of collision.
- *Engineering* – install fall prevention devices, such as guard rails, toe boards and edge protection to minimise the risk of a person or object falling from height.

5.17.5 Training

A person conducting a business or undertaking must ensure that information, training and instruction provided to a worker is suitable and adequate having regard to

- the nature of the work carried out by the worker
- the nature of the risks associated with the work at the time of the information, training and instruction, and
- the control measures implemented

5.18 Excavation and Trenches

5.18.1 Excavation procedure

All excavations more than 1.2m shall require shoring, stepping, sloping or benching as identified in geotechnical report for the type of soil and by a competent person in collaboration of the Project Manager. In all such cases, the HSE Dept. shall agree the method of prevention of collapse. Special training will be provided to all workers involving in excavation activities about safe excavation, identifying underground utilities and support.

Approved MSRA to be in-place On-site, it must be assumed that all excavations may encounter subterranean services or other hazards, such as contaminated soil. In all cases, preparatory checks are required. Prior to perform trial pits check with department/drawing to identify any existing underground utilities. These may include reviews of drawings, and trial pits excavations.

Excavations subject to excavation permits Project Engineer/Site Engineer, Excavation supervisor responsible to issue the permit.

Excavations may be carried out manually or by mechanically means. Manual excavation involves the use of ‘blunt” digging implements such as a shovel, and is to be implemented in all cases where there is a reason to believe that buried services are present that could be damaged by more aggressive digging. In manual excavation tools may not be struck or their effectiveness otherwise enhanced by mechanical means. PTW must be obtained prior to start of the work. All the required NOC from the different government Dept. to be in place prior the start.

In areas that are suitable for mechanical excavation, all hand operated and mechanical tools may be used.

In all cases where groundwater may be encountered, adequate measures must be implemented to remove any water ingress into the excavation. Depending on the nature of the water and the presence of any contamination, the water may require sedimentation and/ or filtering before disposal.

The applicable UAE Legislation is contained in the Ministerial Order No. (32) Year 1982 – Article (15), (19) and (20).

EMPLOYER HSE Standard Document

5.18.2. Shoring

The judgments of a practical shoring engineer enter very largely into this type of work. Due to variable soil condition, surcharge, vibration, and other factors, it is one of the most difficult branches of construction to cover by means of definite rules. A competent person should be held responsible for frequent inspection of Shoring, and each workman should be instructed to report at once any indication of weakness. Jacks should be inspected and confirm the loading capacity before being placed in position and workmen should be cautioned while using, jacks to be checked for properly screwed and locked to avoid any mishap.

5.18.3. Access and Barricading

Where employees are working in a trench of 1.2 m (4 ft.) one or more ladders will be placed in the trench to provide routine and emergency exit from the trench. Ladders will be placed at 25mtr Intervals in trench and the maximum distance to the ladder for a person in the trench to be not more than 12.5mtr. Excavation area to be hard barricaded with adequate warning signage such as “DANGER DEEP EXCAVATION”, “KEEP AWAY WORK IN PROGRESS”.

All excavated areas to be barricade properly to prevent falling of personnel, objects into the excavation. Proper adequate, visible signage’s should be placed to identify fall hazards for public, visitors, and vehicle movements. Barricading the excavation with hard/plastic barrier or warning meshes in accordance with consultant advice.

5.18.4. Training

External (Third Party) and Internal In-house training will be provided all workers involving in excavation activities about safe excavation, identifying underground utilities and support, safety Access & Egress, emergency procedure. Excavation supervisor training to be provided.

5.19 Confined Space

5.19.1. Confined Space Entry

The first step when envisaging to work in a confined space is to consider if the work has to be done in the confined space or if it could be carried out from outside.

If the work can be performed from outside, carry out a risk assessment, set up a safe system of work and do the job without entering the confined space. If the work has to be performed from inside the confined space, a risk assessment must be carried out by a competent person. Key factors to be considered in the assessment would include:

- Previous contents of the confined space
- Surface, and other contamination,
- Oxygen deficiency/enrichment,
- Physical dimensions of, and equipment inside the confined space,
- Chemicals to be used for cleaning or other purposes,
- Sources of ignition,
- Isolation of the confined space and possible ingress of substances,
- The breathing environment inside the confined space.
- Appropriate rescue procedure

A safe system of work must then be established and approved by the Permit. Issuing authority and put into place under the control of the Performing authority.

5.19.2. Preparation

Initiate the Confined Space Entry Permit and Issue Instructions

Begin by planning the measures that must be taken to obtain safe Environments within the confined space. Use the Permit form as guidance.

5.19.3. Confined Space Isolation

Isolation involves both process and electrical isolation. The purpose isolation is to ensure that:
No gaseous, liquid or solid material enters the space prime movers such as motors turbines and engines cannot be started accidentally. Any electrical equipment involved is made safe.

5.19.4. Ventilation Confined Space

Ventilation is required to obtain an atmosphere that is as safe as possible for entry. There are two forms of ventilation: natural and forced (which includes general and local exhaust).
Precautions to take when ventilating

- Electrically bond the ventilation equipment to the confined space.
- Use explosion-proof equipment if the atmosphere is flammable.
- Do not place air intake near flammable or toxic materials.
- Locate exhaust outlet so that contaminants are not returned to the confined Space.
- Ensure that toxic or hazardous substances are not vented directly to the atmosphere or close to areas that are accessible to workers.
- Provide for appropriate disposal of exhaust gases.
- Check that no ignition sources are present for an exhaust of flammable gases.

5.19.5. Atmosphere Testing

Gas testing (with calibrated gas monitoring device) is the determining step in the entire preparation process. If the oxygen, flammable, and/or toxic contents meet the acceptable criteria, the Confined Space Entry Permit application process can continue. Otherwise, more efforts must be made to adequately ventilate the space to achieve the desired levels. If the situation warrants it, the entire process of purging, isolating and ventilating must be repeated until satisfactory gas test results are consistently obtained. This test must be undertaken in a manner where it encompasses all possible atmospheric related hazards as specified on the Confined Space Risk Assessment of that particular confined space. The Air Quality Tester shall be competent, authorized and have locked and signed onto the Permit that allows entry to the confined space to conduct an air quality test. This task shall be included on the relevant Confined Space Risk Assessment assessing all the associated risks. Prior to the entry of the work party, the atmosphere of a confined space must meet the following minimum requirements:

- The atmosphere must contain a less that 5% concentration of Lower Explosive Level (LEL);
- The atmosphere contains an Oxygen (O2) concentration of no less than 19.5% and no greater than 23.5% by volume;

The concentration of any other atmospheric contaminant (for example, ammonia, carbon monoxide, chlorine, oil, etc.) is no greater than the Exposure Standard expressed as a Time Weighted Average (TWA); and there is no potential for the level of atmospheric contaminant to fall outside the above ranges.

- All results from air quality tests shall be recorded timely and accurately on the atmospheric testing sheet documentation.

A person shall not work in a confined space where the air quality tests indicate an environment that has an unsafe or contaminated atmosphere.

5.19.6. Confined Space Entry Permit Form

When the Confined Space Entry Permit form is completed, submitted and approved by the relevant authority, the entry responsibility is ready to be handed over to the Performing Authority at the site of the confined space entry activity. The original copy is issued to the Performing Authority and must be posted at the worksite until the work is completed.

5.19.7. Performing Activity Safely

Several items should be examined /checked when preparing to work in a confined space. They are:

- Low voltage, intrinsically safe lamps/lights
- Electrical tools, complete with earth/ground leakage or residual current protection
- Integrity of oxy-acetylene hoses and electrical cables
- Communications equipment
- Ingress and egress equipment (e.g. ladders)
- Signs and barriers
- Rescue Services
- Entrant should be trained for Confined Space Entry.
- Attendant should be always available during Confined Space Activity.
- Gas Reading Log to be maintained.
- Availability of Calibrated Multi Gas Meter.
- Entry and Exit Log.
- Proper light arrangements as per confined space requirements e.g. LED lights, self-carry battery lights avoid shadows, avoid explosion etc.

5.19.8 Roles and responsibilities of Key personnel for Confined space Entry

Confined Space Entrant: -

Confined space entrant responsibilities are given as under.

- Enter his name prior to entry into confined space area**.**
- Is responsible to inform about his health conditions to his supervisor.
- Is responsible for his safety and for others working near him.
- Entrant should insure to carry gas monitor and should be trained to operate.
- Entrant should be responsible to report any incident occurs during his shift.
- Entrant shall be responsible to wear his PPE (respiratory mask, carry ESCAPE sets, etc…).
- Entrant shall be responsible to remove his tools after completion of his task.
- Entrant shall be responsible to inform any improvements which needs to be maintained for his comfort working inside confined space.
- Entrant shall be responsible and bound to follow HSE Officer instructions.
- Entrant shall be responsible to logout (signed) on confined space log sheet.
- Entrant shall be trained, medically fit and competent to perform his task in confined space.

Confined Space Attendant: -

Confined space attendant responsibilities are given as under.

- Confined space attendant is responsible to take signature during entry of personal and in the time of exit. Check the entrant have valid third-party training.
- Attendant shall also be responsible to maintain communication with entrant while their task to check if everything is going smoothly.
- Attendant shall also be responsible to monitor (if area of confined space is adequate for this) all entrants are free from hazards associated to confined space.
- Attendant shall be responsible to check if all personnel are evacuated safely after terminating their tasks**.**
- Attendant shall be bound to follow HSE Officer instructions.
- Attendant shall be competent and trained to perform his duty

Supervisor: -

Supervisor responsibilities are given as under

- Supervisor is responsible to obtain confined space permit.
- He is bound to check if area is safe to work
- Supervisor shall take responsibility to check the health of his team and are able to work.
- Supervisor shall responsible to report any incident occur during task.
- Supervisor shall be responsible to supervise the task, if it is activity is ongoing in safe manners.
- Supervisor shall be responsible to close out the permit on the completion of task.
- Supervisor will also responsible to coordinate with authorised parities in case of any incident.
- Supervisor should be competent to perform his duties.

Emergency Rescue

The emergency rescue team should be trained and competent to perform emergency rescue operations when called upon:

Each member of the rescue team shall be provided with, and is trained to properly use, the personal protective equipment and rescue equipment necessary for making rescues from confined spaces.

Each member of the rescue team shall be trained to perform the assigned rescue duties. Each member of the rescue team shall also receive the training required of authorized entrants.

Each member of the rescue team shall practice making confined space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, mannequins, or actual persons from the actual confined spaces, or from representative confined spaces.

Each member of the rescue team shall be trained in basic first-aid and in cardiopulmonary resuscitation (CPR). At least one member of the rescue team holding current certification in first aid and in CPR shall be available.

The following Rescue Equipment should be available at Site.

a. Properly calibrated Gas- Monitor
b. Tri-pod with Winch
c. One set of suitable breathing apparatus and emergency breathing pack
d. First Aid Equipment
e. Audible Alarm for Summoning help
f. Intrinsically safe hand torches
g. Mean of Communicating with the surface observer (Whistle).
h. Man-basket & crane

Training

External (Third Party) and Internal In-house training will be provided all workers involving in confined space activities about work permit procedure, identifying Hazards and risks, Atmosphere testing, isolation, safe access & egress, emergency equipment's& rescue procedure.

5.20 Electrical and Gas welding / Cutting

5.20.1 General

All equipment (valves, pressure regulators, pressure gauges, Electrical cables and connection blowpipe/torches etc.) which forms part of an oxyacetylene welding, flame-cutting or similar operational unit shall always be kept in perfect working order and protected from any possible damage.
Gas and Electrical welding equipment shall not be lubricated or smeared with oil, grease, or any other flammable substance, which may easily ignite upon contact with compressed oxygen.
Such equipment shall not be handled with greasy hands or wiped with oily rags.
When pressure reducing valves, safety valves, blowpipe/torches and their accessories, are not in use, they shall be stored in a clean, dry place, safe from any risk of being soiled or damaged.
Maintenance and repair of gas welding equipment shall only be undertaken by the supplier of such equipment, with the exception of

- Cleaning and replacement of torch tip
- Replacement of defective hoses.
- Replacement of defective gauges.
- Replacement of torches

Under no circumstances shall the individual components be dismantled.
Any failure in the equipment shall be brought to the immediate attention of the Supervisor, who shall arrange for a replacement of the defective part and send it to the appropriate place for repair.
Trolleys carrying cylinders for portable units shall not be left in places where they may cause obstruction.

Flashback Arrestors
Flashback arrestors shall be fitted, after the pressure-reducing valve, in order to prevent flashbacks or the mixing of gases in the cylinders or hoses.

Hoses and Joints
The hoses, which carry gases to the work area, shall be flexible and reinforced with canvas
They shall be firmly connected to the pressure reducing valves, flashback arrestors, and blowpipe/torch by means of regular pipe fittings. No other form of fastening shall be acceptable.

5.20.2 Permit to work system

A safe system of work must then be established and approved by the Permit. Site Engineer/ Site supervisor Issuing authority to the Hot Work permit and put into place under the control of the Performing authority. This must include consideration of:

- Removal of hazards wherever practicable
- Trained and competent personnel to perform the welding works.
- Supervision
- Fire prevention Equipment's

- Removal of Combustible materials from the welding area
- Cordon off the welding area.
- Placing adequate signage
- Emergency procedures
- working time limits

HSE officer shall be under sign the Hot Work Permit above mentioned points are compliance

5.20.3 Training

Hot work External & In-house training shall be conducted to all concerned workers

5.20.4 Inspection and Records

Electrical welding machine and Gas cylinders and equipment are periodically inspected by the competent person and records shall be available on the site. A qualified electrician will have to check each item separately and colour code after approval.

5.20.5 Storage and Handling of the Gas Cylinders.

Compressed gas cylinders must be upright at all times, secured to prevent falling, and protected from extreme heat and from being struck by moving equipment and/or falling objects.

If transported by crane, hoist, or derrick, compressed gas cylinders will be handled in a suitable cradle, net, or ship box, never by wire or fiber rope, web or chain sling, nor by dragging. Regulators will be removed and caps, where required, will be in place.

Oxygen cylinders will not be stored near highly combustible materials, especially oil and grease, nor near compressed fuel gas cylinders. Oxygen and fuel gas cylinders in storage will be separated by a distance of 6 m (20 ft.) or by a 1.5 m high (5 ft. high) wall lined on one side with a minimum of 18-gauge steel, or by similar fire-resistant material such as asbestos-cement board.

Caps will be replaced on cylinders that are empty and are designed for such caps and such cylinders will be marked `Empty´. And kept separate from the full cylinders.

5.21 Portable Tools

All portable power tools, and equipment shall be maintained in a safe and proper working condition. No homemade or modified tools shall be used.

The applicable UAE legislation is the “Ministerial Order No (32) Year 1982; Articles (10) & (13). The Federal law No (8) Year 1980 – Article (96) applies too.

- Tools designed with guards, handles and electrical trip switches including dead man switches shall be equipped with such devices at all times.
- Employees shall be trained/ instructed in the proper use of tools.
- All defective tools shall immediately be removed from service for repair.
- Tools shall be inspected for damage or defects daily and prior to use.
- Extension cords and air hoses shall be protected from damage and shall be routed through the job in such a way that they do not form a tripping hazard and are not subject to damage or are damaged by any activity. Extension cords and air hoses shall never be placed on stairs; walkways, grate floor, ground, or floors where these can create a hazard or suffer damage.
- Cords and air hoses shall, as far as is practically possible, never be placed on the ground or walkways, on surfaces or emergency exits.
- Air hoses shall be fitted with whip checks at each coupling joint.

Inspection and Colour coding

The competent person shall complete pre- inspection of Portable tools used on site. Power cords and the switches are the main items, which wear the most. For that reason, a qualified electrician will have to check each item separately and colour code after approval. Portable tools inspection checklist will be used for the inspection the portable tools and records available on the site. Monthly log of all power tools shall be maintained.

5.22 Animals and Reptiles

5.22.1 Type Animals and Reptiles the desert.

Following animals and reptiles are commonly found in the area.

- Bark scorpion
- black widow spider
- bees,
- wasps,
- ants
- snakes

General recommendation to avoid risk from the insects

- Never put your hands or feet anyplace you cannot see.
- Shake out all clothes and shoes before reaching into them.
- Always wear long sleeve safety boots
- Adequate training and information to be given to the all employees before commencing work.

General Treatment and Emergency arrangements.

Since you may not know what bit you, the following are a few things you can do that are generally recommended for most of the above insect stings: -

- Wash the affected area with soap and water.
- Apply ice, using a layer of cloth between it and the skin (no longer than 10 minutes at time).
- Elevate the area if possible.
- Seek medical attention as soon as possible.

If you have not had a Tetanus booster in the past 10 years, you should get one within 72 hours following the sting

5.23 Work place Bullying and violence

5.23.1 Conduct and misconduct

Acceptable standards of personal behaviour and conduct will be mandatory for all personnel on the job site:

- Gambling is forbidden.
- Horseplay and fighting are strictly forbidden.
- Running (except in an emergency) is forbidden.
- Compliance with Site Rules and Safety Regulations is mandatory.
- Possession, use and sale of alcohol and drugs as well as entry to the site under the influence of alcohol or drugs is forbidden.
- Abusive or aggressive behavior is not permitted.
- Willful damage to or misuse of facilities on the job site is forbidden.

- Eating and resting outside designated areas is strictly forbidden.
- Compliance with Project Security Procedures is mandatory.

All Personnel are only allowed to smoke in a designated smoking area. There will also be important HSE postings/ advertisings at every entrance of the Site and in every rest area in order to remind employees of the applicable standards. Such issues concerning personal behaviour will be part of the agenda of the Induction Meeting but will also be discussed during toolbox talks.

5.23.2 Disciplinary actions

The policies, rules, standards, and procedures set forth in this HSE Plan are for the protection of all project participants. If it is discovered that an individual's action or non-action results in an injury or incident, such a person may be terminated from the project immediately. Furthermore, any employee found violating any Project HSE Rule, Regulation or Standard will have his personal file endorsed accordingly and shall be subject to termination from the Project on the third offence. The main JD shall implement a WARNING system that will be applicable for all JDs.

5.24 Occupational Health Arrangements

5.24.1 Medical Assistance and first Aid

Any person selected to carry out the role will be reliable and of good disposition. Not only will they have good communication skills, but also possess the ability and aptitude for acquiring new knowledge and skills and will be able to handle physical and stressful emergency incidents and procedures. Their positions in the company will be such that they are able to leave their place of work immediately to respond to an emergency. Training and qualifications of first aid personnel will be as per standards, individuals nominated to be first aiders or appointed persons will complete and approved training course in first-aid, run by an approved training organization.

The project manager is to ensure that adequate resources are provided; i.e. the equipment, facilities and materials that will be needed to ensure that an appropriate level of cover is available to the employees at all relevant times. First aid equipment suitably marked and obtainable will be made available at specific locations within the workplace.

5.24.2 Noise and Vibration control

Measurements, monitoring, and evaluation are key elements of noise and dust pollution management.
This process is intended to ensure that all activities are being conducted in accordance with the local laws, established policies, and procedures.
Control measures such as noise barriers shall be utilized where practical to prevent the spreading and increase of noise. If it is possible to isolate or insulate the sound, reduction devices shall be considered when practical.
Noise measurements shall be carried out where noise is produced and at other work places where operatives may be subject to higher level than their work generates.
Dust created by on-site traffic will be controlled by spreading water by tanker.
The applicable UAE legislation is the Ministerial Order No (32) Year 1982 – Article (1), Article (5) d, and Article (15)

Controlling the Risks - Noise

The following control measures may be considered in reducing the risks by:

- Sitting or location of noise source (i.e. static plant)
- Removing source of noise - i.e. static plant, loading/unloading areas to a distance whenever possible
- Orientating plant to direct noise away from living/working zones
- Placing site, stores, etc between noise source and noise sensitive areas.
- Screening source with a barrier, wall, acoustic screen, spoil heap or locating source behind partly completed buildings.
- The effectiveness of a noise barrier will depend on its dimensions, its position relative to the source and the listener, and the material used for the barrier.
- Care will be taken to ensure barriers do not, by reflecting sound, transfer the nuisance from one sensitive area to another.
- Control of noise at source e.g. acoustic hoods/covers
- Design and manufacture of equipment.
- Mufflers, acoustic shields and exhaust silencers for equipment.
- Use of alternative, less noisy equipment or methods.
- Acoustic screens and sheds enclosing operator.
- Regular inspection and maintenance.
- Absorbent mountings to reduce noise transmission through structures.
- equipping individual with ear protectors
- All practicable methods will be used to reduce noise levels, but where these remain excessive and harmful, ear protectors will be worn. Ear protectors are not a substitute for other methods of noise control.
- Individuals may be reluctant to wear protection, and personnel at risk will be made aware of the damage caused to hearing by excessive noise levels, which can result in permanent less of hearing.

Information, Instruction and Training

- Employees will be aware of the risks they may be exposed to and the findings will be shared to them. If the lower action level is being exceeded, employees will be informed of the likely noise exposure and risks involved, control measures being implemented, where to get hearing protection if necessary, and awareness on what to do in minimizing the risks.

5.25 Heat Illness Prevention Program

a. Scope

The procedure outlines the principle and provides occupational, health and safety guidelines for implementing an adequate Heat Stress Program in order to adopt organizational and technical measures to prevent and minimize heat related illnesses, protecting the worker from heat related illness and to control heat-related risks. The document addresses also the causes, symptoms and treatment of Heat Stress.

The procedure shall apply to ALL JDS, SUBJDS" EMPLOYEES and VISITORS having access in any part of the Project area all its relevant stages from Early Works to construction, pre-commissioning, commissioning up to demobilization of the Site.

b. Definitions and Acronyms

SUMMER MONTHS: (hot period)	Restricted Period from 15th of June to the 15th September during which work restriction (12:30 pm to 3:00 pm) shall be observed by all workers.
PHYSICAL ACTIVITY	Is the physiological movement of a person's bones and muscles to produce the actions necessary to perform a given activity.
SUBCON:	Any person or company of any tier, including but not limited to, suppliers or vendors of materials hired by the JD to provide materials, services or work on the project.
EMPLOYEE:	Any person engaged in activities for the benefit of the Project and who receives payment, even on a temporary basis.
COMPETENT PERSON:	A person who, because of broad knowledge of worksite safety and health issues, recognized qualifications and experience in a specific assigned discipline has the skills necessary to perform the stated duties, is capable of identifying existing and predictable hazards; has authority to take prompt corrective action to eliminate them and is approved by JD.
HEAT INDEX:	Is a measure of how comfortable we feel in hot and or humid environment? It is an equivalent temperature intended for the general public comfort to express the combined effects of warm temperatures and humidity. It provides a number that describes how hot people feel, much in the same way the equivalent chill temperature, or "wind chill factor." describes how cold people feel.
HAS:	Health Authority Sharjah
HEAT CRAMPS	Are painful spasms of the muscles. The muscles used in doing the work are most susceptible. The spasms can be caused by too much or too little salt.
HEAT EXHAUSTION:	Results when the body cannot cool itself adequately in hot environments. The skin becomes cool and clammy. Symptoms include

profuse sweating, weakness, dizziness. Nausea, dark urine, and headaches.

HEATSTROKE: Is the most serious condition and requires immediate medical attention. The body core temperature reaches 41 degrees C and stops sweating; Symptoms include hot and dry skin and can progress to delirium, convulsions, coma and death.

AIR TEMPERATURE: Is a measure of how hot or cold the air is in a surrounding area usually expressed in degrees Celsius (^{o}C).

RADIANT HEAT LOAD: The rays of the sun (or radiant energy waves), Furnaces, molten, materials, steam, etc. that land on a person's skin also adds energy to the body in the form of heat.

HUMIDITY AND COOLING: Sweating is the way a person's body cools down when it is hot. When sweat evaporates from the skin it takes heat with it and cools the body down. Evaporation of sweat depends on the humidity levels of the air. At a high humidity level e.g.: 80%, evaporation is very slow and heat loss from the body is less efficient so the body takes longer to cool down. At low humidity evaporation is fast and body cooling is good.

c. Responsibilities

i. Project Manager:

- Verify the implementation of this procedure and require a prompt correction of any possible deviation.
- Demonstrate its commitment to safety and health and follow through to correct any uncontrolled hazards identified.
- To place the requisition, to prepare summer time shifts schedule.

ii.Project Engineer/Site Engineer:

- Collaborate with the HSE department on site to provide the necessary technical and organizational support.
- To install shaded areas, to ensure the distribution of water, to plan as far as practicable the demanding activities during the coolest part of the day.

iii. HSE Officer:

- The continuous monitoring of the implementation of this procedure, reporting violations and/or noncompliance issues to Project Management for immediate corrective action
- To report cases to COMPANY and to collaborate with COMPANY in conducting investigations of heat-related incidents

- To prepare the necessary requisitions, to promote the drinking water, to provide the training sessions, to analyse trend regarding the heat illnesses to select the exposed team to be provided with preventative electrolyte.

iv. First Aider

- To attend to routine and emergency medical cases as and when required.
- To maintain the standards of hygiene, professional readiness and competencies to enable the goals and purpose of the First Aid Room to be met.
- Regularly audit supplies of medicines and dressings to check they are maintained at adequate levels. And ensure that costs are minimized by efficient use of the resources.
- To refer to hospital in case serious medical and ill health cases.
- To record the distribution of electrolyte, to record the heat illnesses.

v. Foreman / Team-In-Charge

- Establish and enforce management of work-in-heat protocols and occupational health procedures.
- Ensure that the workers have been informed and trained to recognize heat stress symptoms and to control heat exposure before being assigned to the activity.
- Implement engineering controls and preventive measures, where applicable.
- Provide workers with adequate amounts of cool drinking water close to the workplace and encourage adequate fluid intake.
- Provide workers with appropriate clothing and personal protective equipment
- Allow workers to self-pace where applicable and take rests when they can to cool down.
- Identify Workers with a medical condition and ensure that they shall discuss working in the heat with their doctor.
- To ensure electrolyte is mixed into the portable water container.

vi. JDs and Subcontractors Employee

- Watch out safety of co-workers.
- Scheduled breaks in cool areas.
- Watching out water breaks as needed. Drinking plenty of water.
- Reporting trouble to a supervisor at any time they are concerned about safety

d. Heat Stress

Heat stress is the effect that the thermal environment has on a person's ability to maintain a normal body temperature. Physical work generates heat in the body which must be lost to the environment through sweating and evaporation. A hot or humid environment makes this more difficult and this can affect both mental and physical performance. Inability to get rid of body heat adequately may result in heat illness.

e. Factors influencing Heat Stress

The heating and cooling balance in the body depends on the following factors:

- Air temperature
- Humidity (moisture in the air)
- Radiant heat load (sun, furnaces, molten material, steam, etc.) physical activity (how hard you're working)

- Cooling (by the evaporation of sweat)
- Body adjustments (acclimatization)

There are two sources of heat exposure, the outside environment and internal muscle activity. (80% of muscle energy is turned into body heat.)
High temperatures and high levels of physical work create heat stress. The body cools itself by evaporating sweat.

f. Access to Water and fluid replacement

JD employees must have access to potable drinking water and encouraged to frequently consume amounts of water throughout the day - up to 4 cups per hour depending heat conditions. If cooled water dispenser is not readily accessible, provide portable water containers.
Employees are also encouraged to begin drinking water prior to work.
Cool water must be made readily accessible to employees. Ideally, the water should be placed close to the workplace so that the employee can reach it without abandoning the work area.
Thirst is not a good indicator of the need for replenishment. On a hot job, employees can lose up to one quart an hour but it is difficult to drink that much at any one time.
Consequently, employees should be encouraged to drink small amounts frequently, e.g., one cup every 15-20 minutes.
Employees should be encouraged to add little salt to their food during the hot season. Drinking water with electrolyte additive should be made available.
The additives should be completely dissolved before the water is distributed, and the water should be kept reasonably cool.

g. Shade

Employees exposed to heat related illnesses or in need of a recovery period from the heat must be provided with access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than five minutes. Access to shade should be permitted at all times.
On hazardous dust jobs where employees are in contaminated environments, wearing respiratory protection, break areas must be established.
Other methods of cooling, other than shade, can be used if it can be demonstrated that these methods are at least as effective as shade.

i. Time schedule

As the best prevention is to prevent exposure, site activities should be planned during the coolest period of the day. Therefore, the summer time shifts system is fully part of the preventative measures to be implemented on site.
As the physical activities impact the reaction to heat, it is recommended to limit the working hours of the employees to a maximum of 9 hours per shift.

ii. Training

The prevention of heat stress and heat-related illness begins with educating supervisors and employees on the hazards of working in hot environments.
Training must be provided for employees working on job tasks where environmental risk factors for heat illness are present, and training for their respective supervisors. Refresher training must be provided annually.
All training records prepared in association with the Heat Illness Prevention Program will be maintained by site HSE department.

iii. Record

All heat-related incidents or illnesses must be reported to your supervisor immediately. Supervisors must inform immediately the HSE team and first aider accordingly.
An Incident Report will be completed as necessary. Heat related illness cases will be recorded in a specific log.
Electrolyte distribution is to be recorded under the control of site first aider using the specific log.

h. Implementation on sites

i. Electrolyte

- The HSE site in-charge selects the exposed team to be provided with electrolyte and prepare the nominative list of foremen / team in-charge for the JD employees working outside under the direct sunlight.
- Awareness sessions are to be conducted to site supervision and to workforce, HSE team is to maintain the records.
- For concerned teams working under direct sunlight:
- Site Engineer are requested to ensure the concerned teams are regularly using water with electrolyte.
- Each concerned foreman is responsible to ensure the electrolyte is mixed in his team portable water containers once a shift or as per site conditions.
- The above requirement is a minimum, site and environmental heat condition may necessitate additional mixing of electrolyte.
- The male nurse will keep a record of the distribution of electrolyte using attached format or equivalent formats from client.

ii. General precautions to prevent heat illnesses

- Condition yourself for working in hot environments. Allow your body to adjust over a couple of days (acclimatization).
- Drink plenty of water.
- Hydration is a continuous process. Don't wait until you're thirsty! By then, there's a good chance that you're already on your way to being dehydrated.
- Electrolyte drinks are good for replacing both water and minerals lost through sweating.
- Never drink alcohol, and avoid caffeinated beverages like coffee and soda as these liquids can have the opposite effect and can actually increase the level of dehydration.
- Take short breaks, especially if you notice you're getting a headache or you start feeling overheated. Assure you know where to get water and available shade area at the job site
- Drink water before work is to begin.
- Wear your lightweight working overall with long sleeves; this will protect your skin when working out in the sun.
- Immediately report all unsafe conditions to your supervisor without delay.

iii. Heat Exposure Illnesses

Heat stress symptoms are a set of natural signals telling that something needs to be done to balance body's heating and cooling. As body heats up, it tries to rid itself of excess heat through the evaporation of sweat. If it is unable to cool itself this way, body temperature will increase.

When body temperature gets above 38-39°C, the brain starts to overheat, leading to a shutdown of body's cooling system (sweating stops). Body's temperature now rises even faster, leading to heat stroke and possibly death.

The causes, symptoms, treatment, of various heat-related illnesses are summarized below:

	HEAT RASH	HEAT CRAMPS	HEAT SYNCOPE (FAINTING)
CAUSES	Hot humid environment; plugged sweat glands	Heavy sweating drains a person's body of salt, which cannot be replaced just by drinking water	Fluid loss and inadequate water intake
SYMPTOMS	Red bumpy rash with severe itching	Painful cramps in arms, legs, or stomach that occur suddenly at work or later at home Heat cramps are serious because they can be a warning of other more dangerous heat- induced illnesses	Sudden fainting after at least two hours of work; cool moist skin; weak pulse
TREATMENT	Change into dry clothes and avoid hot environments, rinse skin with cool water	Move to a cool area; loosen clothing and drink an electrolyte-replacement beverage, if the cramps are severe or don't go away, seek medical aid	GET MEDICAL ATTENTION Assess need for CPR; move to a cool area; loosen clothing; make person lie down; and when the person is conscious, offer sips of cool water. Fainting may also be due to other illnesses.
PREVENTION	Wash regularly to keep skin clean and dry.	Reduce activity levels and/or heat exposure. Drink fluids regularly. Employees should check on each other to help spot the symptoms that often precede heat stroke.	Reduce activity levels and/or heat exposure. Drink fluids regularly. Employees should check on each other to help spot the symptoms that often precede heat stroke.

	HEAT EXHAUSTION	HEAT STROKE
CAUSES	Fluid loss and inadequate salt and water intake causes the body's cooling system to start to break down	If a person's body has used up all its water and salt reserves, it will stop sweating, which can cause body temperature to rise; heat stroke may develop suddenly or may follow from heat exhaustion
SYMPTOMS	Heavy sweating; cool, moist skin; body temperature above 38°C; weak pulse; normal or low blood pressure; tired and weak, nausea and vomiting; very thirsty; panting or breathing rapidly; blurred vision	High body temperature (above 41°C) and any of the following: the person is weak, confused, upset, or acting strangely; has hot, dry, red skin; a fast pulse; headache or dizziness; in later stages, a person may pass out and have convulsions THIS IS AN IMMEDIATE MEDICAL EMERGENCY. PROMPT ACTION MAY SAVE THE PERSON'S LIFE
TREATMENT	GET MEDICAL AID This condition can lead to heat stroke, which can kill; move the person to a cool shaded area; loosen or remove excess clothing; provide cool water to drink; fan and spray with cool water	GET URGENTLY MEDICAL AID This condition can kill a person quickly; remove excess clothing; fan and spray the person with cool water; offer sips of cool water, if the person is conscious
PREVENTION	Reduce activity levels and/or heat exposure. Drink fluids regularly. Employees should check on each other to help spot the symptoms that often precede heat stroke.	Reduce activity levels and/or heat exposure. Drink fluids regularly. Employees should check on each other to help spot the symptoms that often precede heat stroke.

i. Safe Work Practices

The following safe work practices are general guidelines that will assist with the prevention of heat stress hazards while working in a hot environment:

- Keep skin clean and dry
- Work in the shade when possible
- Learn to recognize the signs and symptoms of heat stress in yourself and co-workers. Take breaks when feeling tired, dizzy, or weak.
- Cover skin with lightweight clothing where possible

- Reduce activity levels and/or heat exposure whenever possible
- Drink fluids regularly, avoiding caffeine and alcohol
- Use the buddy system where possible; check on your co-workers periodically to assist with the early recognition of heat illness symptoms

Personal Control Measures to Reduce Heat Stress to all employees.

It is important that employees listen to their bodies and respond to any symptoms of heat stress. The following measures can help to prevent heat-related illnesses:

- Hydrate yourself. Water is crucial to helping the body adjust to high temperatures. The rate of water intake must equal the increased rate of water loss by perspiration to keep your body temperature normal.
- Eat smaller but more frequent meals or snacks while working in hot environments
- Avoid alcohol or beverages with caffeine – these make the body lose water and increase the risk of heat stress
- Wear light clothing that permits the evaporation of sweat (i.e. cotton clothing).
- Check with your doctor if your medication may affect your heat tolerance
- Make healthy lifestyle choices (i.e. body weight, fitness, diet, rest)

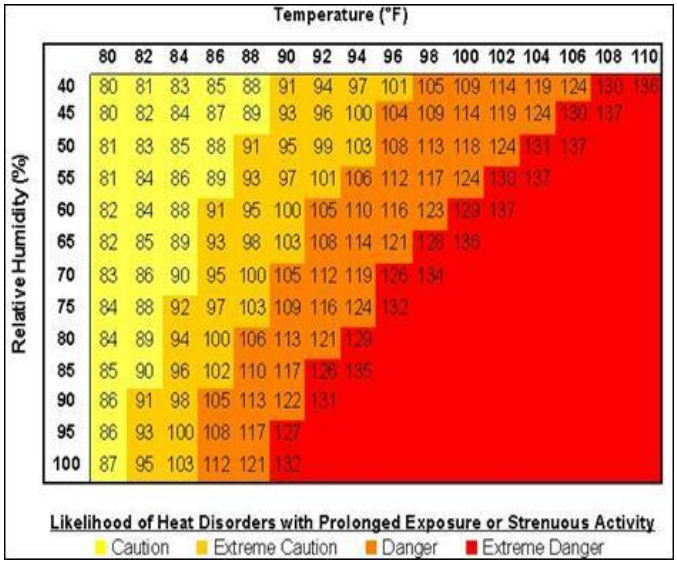
Many construction activities may require certain tasks to be done in the heat. Therefore, JD will provide cool drinking water to employees and encourage them to drink it often.

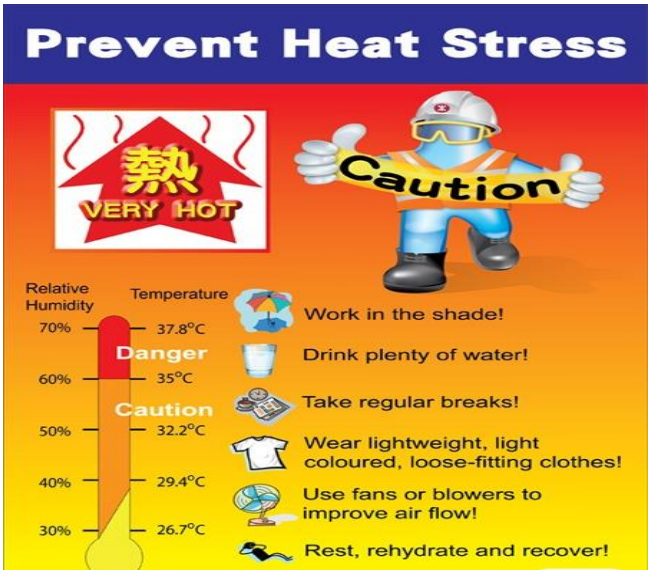
- Drink at least one cup of water every 30 minutes, even if you don't feel thirsty. Water is provided by your department - fill up your bottle prior to the start of your day and during breaks and lunch.
- Use mechanical aids for manual lifting where possible (i.e. dollies, carts, hoists, etc.)
- Use cooling fans where possible.
- Alter your work/rest schedule. Take breaks as needed and alter your pace of work. Rotate work with co-workers if possible. If you feel tired, weak, or dizzy, take a break. Breaks should be taken in air-conditioned buildings whenever possible.
- Heat stress increases when heavy work is done under environmental heat conditions. Don't push yourself beyond your limits. It could be harmful to your health, and could put you at risk of having an accident.
- Wear sunscreen and cover your head if working outside as part of your personal protective equipment
- Notify your Supervisor or co-worker of any heat stress symptoms immediately.

Attachment 1. Heat Stress Posters



Attachment 2. Heat Stress Chart





5.26 Environmental Arrangements

1.0 Objectives

The purpose of this section is to set out the process by which JD will manage Environmental arrangements.

2.0 Responsibilities

Project Manager:

- The Project Managers have the responsibility to see their respective areas follow the procedures outlined below and that each employee at those areas is aware of the procedures and understands the importance of adherence to them.
- The Project Manager and his employees on each area are responsible for the waste arising from or passing through that area. These responsibilities include issuing site specific waste management procedures, monitoring, keeping records and follow-ups.
- Each discipline supervisor and employee at respective areas should ensure that his area wastes are handled in accordance with this procedure and site-specific procedures.
- Will ensure that all consents / licenses are in place prior to carrying out the associated works the project and utilize them in an optimal was for the benefit of present and future generations.
- Will ensure that the Waste Management Procedure reflects any changes during the construction that may have a significant environmental impact and manage them accordingly.

HSE Officer:

- Will carry out or supervise all waste monitoring on the project ensuring that all records are fully completed and keep correctly.
- Will carry out inspections as necessary to ensure any waste issues are identified and managed in accordance with this plan.
- Will be responsible for proper disposal of waste and will track the waste from origin to final disposal and keep the records of the same.
- Will ensure that all waste is labelled, segregated and transferred correctly.

3.0 Definitions

Company	**Al Jazeerah Drilling** (JD)
Duty of Care	Is a legal requirement to have thought or regard for those who may be affected by one's acts or omissions.
Environmental Incident	An unplanned event or chain of events that has or could have a negative impact on the environment.
Waste Management	Collection, storage, transportation, recycling and disposal of wastes including the care of disposal sites.

Waste	Is defined as any refuse, garbage, other discharged materials or wastes, including any solids, semi – solids or liquid materials resulting from the projects and also including the camps and offices.
Domestic Waste	Means household waste and commercial, agricultural, governmental, industrial waste which have chemical and physical characteristics similar to those of household.
Non – Hazardous Industrial and commercial Waste	Means any waste that are not regulated hazardous waste and have physical and chemical characteristics or both that are different from domestic waste.
Hazardous Waste	Means any waste as defined by which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or which may pose a present or potential threat to human or the environment.
Waste Disposal	Operations not involving extractions or reuse of substances such as burial, injection, biological or physical – chemical treatment, permanent storage, destruction or any other method approved by the competent authorities.

4.0 Legal Requirements

Waste disposal in the UAE is regulated through the following legislation:

- Law No. (21) Of 2005 for Waste Management in the Emirate of Sharjah.
- UAE Regulation for Handling Hazardous Materials, Hazardous Wastes and Medical Wastes, 2001
- Federal Law No. (24) Of 1999, For the Protection and Development of the Environment -Chapter V of Handling Hazardous Substances and Wastes and Medical Wastes.

5.0 Waste Identification

The Project Manager will provide the necessary information to the HSE Department of all materials to be used in the project. All waste will be evaluated to determine their characteristics and regulatory status as hazardous or non-hazardous. This determination can be performed using one or more of the following methods:

- Knowledge of process generating the waste
- Material Safety Data Sheets (MSDS)
- Existing published or documented data on the hazardous waste or on hazardous waste from similar processes.

6.0 Waste Classifications

Solid waste

The JD shall ensure that all facilities are maintained in a neat and tidy condition and the site will be kept free of litter. Measures shall be taken to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. At all places of work the JD shall provide litter bins, containers and refuse collection facilities for later disposal.

Solid waste may be temporarily stored on site in a designated area prior to collection and disposal. Waste storage containers shall be covered, tip-proof, weatherproof and scavenger proof. The waste storage area shall be fenced off to prevent wind-blown litter.

No burning, on-site burying or dumping of waste shall occur. All solid waste shall be disposed of offsite at an approved landfill site. The JD shall supply the HSE Dept. with certificates of disposal.

Domestic Waste

JD shall provide metal refuse bins or equivalent plastic refuse bins, Refuse shall be collected and removed from all facilities at least twice per week, or the frequent of its requirement. Domestic waste shall be transported to the approved refuse disposal site in covered containers or trucks.

Construction Rubble/Waste

Inert construction rubble and waste materials shall be disposed of by approved waste collecting JD.

Scrap Metal

Scrap metal shall be disposed of offsite.

Hazardous Waste

- Used oil and grease shall be removed from site and sold to an approved used oil recycling company. Under no circumstances shall the spoiling of tar or bituminous products on the site, over embankments, in borrow pits or any burying, be allowed.
- Unused or rejected tar or bituminous products shall return to supplier’s production plant.
- Used oil, lubricants, cleaning materials, etc. from the maintenance of vehicles and machinery shall be collected in holding tanks and sent back to the supplier or removed from site by a specialist oil recycling company for disposal.

Waste Water

Water from kitchens, showers, laboratories, sinks etc. shall be connected to an existing sewer network and in absence of the above a septic tank/soakage pit shall be constructed on site and disposal of the collected waste shall be carried out in an approved manner.

Runoff from fuel depots / workshops / machinery shall be collected in trays and later disposed of in an approved manner. Water from concrete batching and washing areas shall be collected in sedimentation tanks from where the aggregates shall be segregated from the cement slurry. These aggregates can be reused for multiple purposes and the clean water shall be reused for the washing of vehicles. The sediment sludge shall be then disposed of to the approved designated areas.

7.0 Waste Storage

The project will have a specific waste storage area, where it is not possible to dispose of waste due to logistic constraints and minimum quantity requirements. Therefore, the project will be allocating a temporary waste storage area prior to disposal. The stocked waste will be collected on a weekly basis or depends on the volume of waste generated of the project. Storing a waste on the project premises will adhered to the company guidelines:

- Waste should be segregated to facilitate in handling and to prevent contamination.
- Waste should be stored so that it does not pose any threat to personnel like no obstructions, correct stacking, away from heat sources.
- Waste that has potential to contaminate the soil, the waste storage area should have bonded wall which can hold 110% of the waste volume.
- Waste storage area should be of suitable distance from the eating area or rest areas.
- Hazardous waste should be stored on drums with cover or special containers.
- Hazardous waste storage should be labelled with **"*HAZARDOUS WASTE*** "in Arabic and in English.
- Items such as paper, plastic, glass, wood, metal, etc. will be separated and stored in a designated area for proper disposal.
- Suitable spill clean-up materials must be kept available on or close to the designated storage area in order to deal with any accidental spillages or leakages.
- Emergency shower / eyewash facilities at the nearest location from the waste storage area.
- Fire extinguishers will be provided with minimum distance of 10.0 meters from the allocated waste storage area.

8.0 Transportation

JD will make contract with approved RSP (Registered service Provider) to transport the waste and will dispose on an approved disposal area of the municipality.

Transporting of waste will be carried out on weekly basis or depending on the volume of the waste generated of the project.

All vehicles/transporters will have valid registrations and licenses for the transportation of wastes. All waste that needs specific vehicles will be transported via Environmental Service Providers approved by the government.

9.0 Waste Disposal Management

The Control of Substances Hazardous to Health (COSHH), provides a comprehensive and systematic approach to the control of hazardous substances at work, where risk to health and the costs of failure are often substantial in both human and economic terms.

The HSE Officer will manage the day to day issues of COSHH at a site level and comply with the company requirements of this Plan.

Should we come across contaminated soils/groundwater and other unforeseen events, (i.e., buried tanks), samples will be sent for analysis and once identified, they will be stored on and covered with plastic sheeting until characterization & disposal in areas designated by relevant authorities. A specialist team will have to come in (to remove) for laboratory analysis.

JD will maintain monthly waste management record as per the check list that will be submitted to the Project Manager on a monthly basis.

Following shall be the storage & disposal procedure for various type of hazardous wastes generated by the company.

- The hazardous waste storage shall comply with the following requirements:
  - ✓ Different categories of hazardous wastes shall be segregated and stored separately.
  - ✓ The storage area shall have impervious flooring with curb wall to ensure that no spilled material goes outside the designated area. In case of liquid hazardous wastes, the volume of secondary containment shall be min 110% of the volume of largest barrel containing liquid hazardous waste.
  - ✓ There shall be no ingress of rain water on the containers containing hazardous wastes.
  - ✓ Identification of hazardous wastes containers shall be carried out with their name and/or category number.
- Transportation for disposal of hazardous waste shall be through hazardous waste transportation manifest and notify the pollution control board.
- Record of generation a disposal of hazardous wastes shall be maintained, specifying the quantity received and disposed of from the central storage

Environmental Inspection

The weekly inspection for the impact on the environment will be checked and corrective action will be taken immediately by the concerned area supervisor.

The storage areas/containers will be inspected and marked appropriately.

Coordination with Regulatory Authorities will be maintained to keep abreast of current regulations/requirements and reporting guidelines.

10.0 Training Program

During the construction works, all staff will receive inductions covering relevant Project environmental requirements prior to the commencement of their work. Training programme will include formal induction programmes and toolbox talks. Development of training programme, training material and its delivery by the JD shall be done in the light of trainee's ease to understand common languages e.g. English, Arabic, Hindi and Urdu etc. As a minimum, training modules will include:

- Explanation of the importance of compliance with the CEMP;
- Discussion on the construction work activities interacting with the environment and potential environmental impacts that may arise from them;
- Explanation of the roles and responsibilities of individuals responsible for matters pertaining to the CEMP, especially for emergency preparedness and response; and
- Explanation of the mitigation measures that must be implemented when carrying out their activities.

The training programme will be developed and implemented for the following staff:

- All JD's staff, involved to the project execution, its sub-JDs and suppliers;
- Discipline Leads (Supervisor's/ foreman's etc.);
- Drivers and operators of any type of tools, equipment, machinery and vehicles engaged for main construction works;
- Visitors;
- Waste handlers;
- Emergency response teams;
- All project office staffs, including but not limited to management staff and their subordinates of all levels.

The table below provides a list of topics for environmental awareness trainings, which will be elaborated during the course of the construction works. Training material shall be of an international standard. Potential sources of information for the preparation of training material are:

- United States Environmental Protection Agency: http://www2.epa.gov/learn-issues
- NetRegs: http://www.netregs.org.uk/business_sectors/construction/all_guidance.aspx
- Construction Industry Research and Information Association: www.ciria.org
- http://www.hse.gov.uk/

11.0 Environmental Aspects and Impacts

The Environmental Aspects & Impacts (EA&I) are documented in Appendix-7. The matrix used for EA&I is described in below table.

Probability of environmental impact

	Probability (P)	
	Manifestation	**Frequency**
Almost certain	Event that could occur several times per year at the particular workplace	Expected to happen
Likely	Event that could occur annually to several times	> 1 per year
Possible	Event that can occur at some times in the past 10 years	< 1 in 10 years
Unlikely	Event that can occur 1-2 times in company's history; unlikely to occur during the life-time of a project/operation	< 1 in 50 years
Rare	Event that has never been known to occur within Contracting or is extremely unlikely that it could ever occur	> 50 years

Consequences of environmental impact

	Consequence (C)
Catastrophic	- Long term or severe widespread irreversible environmental damage - National media interest - Criminal prosecution - Possible shutdown of the site - Unique or rare species and the integrity of the site may be seriously affected. - Total loss to key socio-economic features, such that completely displaces or disrupts planned or existing land use, tourism or recreational activities. - Acute effects on human health affecting both site users and users of sites in the vicinity arising from wastes on the site. Chronic damage to human health affecting site users and users of other sites in the vicinity arising from wastes on the site.
Major	- Environmental incident which can't be controlled without external help and with a significant environmental impact beyond the boundaries of the site - Regional media interest - Multiple community complaints (+5) - Notification to Authority required - Civil prosecution possible - Temporary stop of activities - Unique or rare species may be affected. The integrity of the site may not be affected but key attributes will be altered or improved - Substantial change to key socio-economic features, such that severely displaces or disrupts planned or existing land use, tourism or recreational activities. - Frequent nuisance from potential disease bearing vectors such as insects and vermin or dusts hazardous to human health but with no permanent effects
Serious	- Environmental incident with a significant environmental impact beyond the boundaries of the site but which can be controlled internally - Local media interest - Repeated community complaints (2-5) - Regulatory enforcement action possible (e.g. fine, notice, order) - Temporary stop of activities - Common occurring species and habitats will be severely affected. - Partial loss or change to key socio-economic features, such that compromises planned or existing land use, tourism or recreational activities. - Intermittent nuisance from potential disease bearing vectors such as insects and vermin or dusts hazardous to human health but with no permanent effects
Moderate	

	- Environmental incident which can be controlled internally and with limited environmental impact (=impact confined to site, localised effects of short duration) - Warning letter from Authority possible - Isolated Community complaint (1) - Common occurring species and habitats will be moderately affected. - Detectable but not material change to key socio-economic features, such that slightly disrupts proposed or existing land use, tourism or recreational activities. - Intermittent nuisance, odours, and dust not hazardous to human health
Minor	- Environmental incident which can be controlled internally and withy very limited environmental impact (no contamination, localised effects) - No community complaints - No corrective actions required - No breach or regulation or consent - Common occurring species and habitats will hardly be affected - Barely detectable changes to socio-economic features which do not compromise proposed or existing land use, tourism or recreational activities. - Occasional nuisance, odours, and dust not hazardous to human health

In order to identify if an impact, whether negative or beneficial, is significant, a risk rating shall be applied based on “Probability” and the possible “Consequences”.

The risk rating assessment is performed in accordance with the below given risk matrix:

Risk matrix

	CONSEQUENCES					
PROBABILITY	**RISK MATRIX**	**1 - Minor**	**2 - Moderate**	**3 - Serious**	**4 - Major**	**5 – Major Catastrophic**
	5- Almost certain	Medium	Medium	High	High	High
	4 - Likely	Low	Medium	Medium	High	High
	3 - Possible	Low	Low	Medium	Medium	High
	2 - Unlikely	Low	Low	Low	Medium	Medium
	1 - Rare	Low	Low	Low	Low	Medium

Risk level rating

Opportunities	Positive environmental impact; keep up the good work and extend activities as appropriate
Low	Low environmental impact; the activity may proceed with normal supervision after implementing the preventive and control measures
Medium	Potential for moderate environmental impact; activity can proceed so long as the highest level and most appropriate risk control measures have been identified and implemented
High	Potential for high environmental impact; activity may not proceed. Alternate controls to put in place to reduce the risk rating to LOW or MEDIUM

An aspect is considered to have a significant environmental impact if:

- The outcome of the risk rating calculation is medium or high;
- The aspect goes against company values/policy;
- The aspect goes against legal requirements (law / permit);
- The aspect goes against customer requirements;
- The aspect goes against environmental and sustainability standards requirements
- The aspect may have an important beneficial environmental impact.

If an aspect is considered as significant, preventive and control measures needs to be determined after which a residual risk calculation shall be performed. This residual risk rating shall take in account the determined preventive and control measures.

12.0 References

Sharjah Municipality Code of practice
Law No. (21) Of 2005 for Waste Management in the Emirate of Sharjah.
UAE Regulation for Handling Hazardous Materials, Hazardous Wastes and Medical Wastes, 2001
Federal Law No. (24) Of 1999, For the Protection and Development of the Environment -Chapter V of Handling Hazardous Substances and Wastes and Medical Wastes.
EMPLOYER Health Safety & Environment Standard Documents

5.27 Fire prevention and protection.

5.27.1 General

Megaphone will be installed at Office as alarms in case of Fire / Emergency. Flammable materials shall be stored at a safe distance away from the work areas. All Fire extinguisher shall be certified by 3rd party and monthly inspection to be carried out by JD competent Person. Record shall be keep containing the type of fire extinguisher, size, and its location.
Fuel storage tanks shall be grounded, vented located within bounded areas and provided with signage and foam type fire extinguishers mounted on posts at least 3m from the tanks.
Compressed gas cylinders shall be stored and transported as per supplier recommendations.
In general, the main emphasis shall on fire prevention, but when a fire does occur the priority shall be the evacuation of personnel rather than firefighting.

After evacuation, containment shall become the prime consideration until the alarm has been transmitted to the Fire Brigade/ Civil Defence and their arrival on Site.

5.27.2 Types of Fires

It is important to be able to identify the type of fire so that the correct type of firefighting equipment can be selected for use. The Fire Protection Association classifies five categories of fire:

- Class "A" Fire : Fires in ordinary combustible materials such as cloth, wood, Paper etc.
- Class "B" Fire : Fires in flammable liquids, oils etc.
- Class "C" Fire : Fires in gases such as Acetylene, LPG etc.
- Class "D" Fire : Fires in metals such as magnesium, sodium etc.
- Class "E" Fire : Fire in electrical equipment

5.27.3. Types of extinguishers to be used

- Class "A" Fire : Dry Chemical Powder (all-purpose type),
- Class "B" Fire : Foam, Dry Chemical Powder (all-purpose type)
- Class "C" Fire : CO2, Dry Chemical Powder (all-purpose type)
- Class "D" Fire : Dry Chemical Powder (all-purpose type)
- Class "E" Fire : CO2, Dry Chemical Powder (all-purpose type)

Fire Extinguisher should be inspected monthly and record the inspection. Should be located in designated area.

5.27.4 Distribution and location of fire Fighting Extinguishers

The location, quantity and type of fire extinguishers will be shown on emergency plan drawings. The numbers of extinguishers and type will be based upon the fire risk level linked to the construction schedule.

Fire extinguishers are an important part of any fire protection program. For fire extinguishers to be effective, the following conditions must be met:

- The fire must be discovered while it is still a small fire.
- The extinguisher must be easily accessible and in proper working condition.
- The extinguisher must be of the proper type to extinguish the fire.

Site personnel will be trained to recognize types of fire and to make correct judgement on the type of equipment to be used for firefighting.

The HSE Officer will organize training sessions to instruct selected personnel and keep records of the training sessions.

4.27.5 Fire Prevention

Personnel must know the place of work, its fire hazards, and the location of firefighting equipment.

Keep all firefighting equipment clear of any obstruction. Provide easy access to firefighting equipment in order to save time and minimize fire damage. Keep the work place clean and tidy.

Emergency exit paths shall be maintained free of any obstruction and clearly marked

The use of inflammable, flammable, and burnable items or items likely to pose a fire hazard shall be minimized.

Waste materials shall be collected into one central location and removed from site at regular intervals to reduce potential fire hazards. Highly flammable material shall be stored outside the building structure at suitable locations and as instructed by the HSE Officer.

Open flame work (welding, cutting, etc.) shall require the utmost caution. All combustible materials in the work area must be removed or covered as sparks may fly up to 10 meters.

4.27.6 Organization

Stacked combustible materials in yard storage shall not exceed a height of three (3.0) meters or four and a half (4.5) meters if handled by mechanical equipment. Stacks shall not be closer than five (5.0) meters to buildings or structures.

Driveways will be at least five (05) meters wide and free of debris around combustible storage areas. These storage areas will not exceed fifteen (15) meters by fifteen (15) meters in plan.

Storage of flammable materials in tanks shall be bounded.

Staircases shall be erected at the same time as the floor slab to guarantee escape routes and access for firefighting personnel.

Disposal of combustible waste material shall comply with the applicable fire and environmental Laws and Regulations.

Ventilation that is adequate to prevent the accumulation of flammable vapours to hazardous levels shall be provided in all areas where flammable and combustible liquids are handled or used.

All storage, handling, and use of flammable and combustible liquids shall be under the supervision of a qualified person.

Motors of all equipment shall be shut off during refuelling.

Paint scrapings and paint-saturated debris shall be removed from inside any structure on a daily basis.

4.27.7 Rules and Regulations

Personnel will not be permitted to return to their work unless a competent person or the Civil Defence Authorities have authorized the “All Clear”.

The entire job site is declared a NO SMOKING AREA. Smoking will only be permitted in clearly identified areas equipped with ashtrays.

All sources of ignition shall be prohibited in areas where flammable and combustible liquids are stored, handled, and processed: suitable “NO SMOKING” and/ or “NO OPEN FLAME” signs shall be posted in all such areas.

The contact of oil, grease or paint with oxygen cylinders shall be avoided. There may be a risk of explosion due to oxidization.

Compressed gas cylinders must be stored in separate areas.

Never check for LPG or acetylene gas leaks with a lighted match or cigarette lighter. Apply soapy water with a brush.

Never keep oil, acetone, or any flammable liquid in or near areas where grinding, welding, or any other sources of heat are generated.

Do not store unwanted materials in electrical cabins, AC plant rooms etc...

Switch off the main supply if electrical equipment is not in use.

Switch off all task lights, heaters or any kind of machine when not in use.

Never throw lighted cigarettes or burning materials into dustbins as they may ignite and create a fire when you have left the area.

Never leave open fires/ flames unattended. (Such as torches and the like).